CONVERGING DISCIPLINES

MANAGEMENT OF RECORDED INFORMATION IN DEVELOPING COUNTRIES

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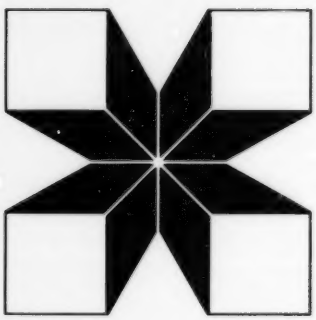

CANADA

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This series includes meeting documents, internal reports, and preliminary technical documents that may later form the basis of a formal publication. A Manuscript Report is given a small distribution to a highly specialized audience.

La présente série est réservée aux documents issus de colloques, aux rapports internes et aux documents techniques susceptibles d'être publiés plus tard dans une série de publications plus soignées. D'un tirage restreint, le rapport manuscrit est destiné à un public très spécialisé.

Esta serie incluye ponencias de reuniones, informes internos y documentos técnicos que pueden posteriormente conformar la base de una publicación formal. El informe recibe distribución limitada entre una audiencia altamente especializada.

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CONVERGING DISCIPLINES

MANAGEMENT OF RECORDED INFORMATION

IN DEVELOPING COUNTRIES

Papers presented at
a round table discussion
held at
the National Archives of Canada
Ottawa
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Edited and with an introduction by Atsuko Cooke

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Dedication

In memory of Ms. Pauline Oswitch, late Senior Program Officer, Information Sciences Division, IDRC. She was a major force in bringing us together for the Round Table, and we deeply regret that she passed away so suddenly without seeing the completion of this publication.

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FOREWORD

During the last twenty years, archival institutions in developing countries have made remarkable progress, mainly due to the untiring efforts of leading Third World archivists. The Information Sciences Division of IDRC is happy to have participated in this movement. The Round Table, which was organized in conjunction with the International Council on Archives Symposium on Current Records, in May 1989, was a symbolic event to celebrate the achievements, acknowledge the status of developments, and look to future directions. The Round Table was designed to share archivists' experience, to discuss problems specific to developing countries, and to explore possible solutions. I am satisfied that these objectives have been achieved. The papers included in this volume are a testimony to the depth and breadth of the achievements, and to the realization of the problems we all face now.

The Round Table owes much of its success to the co-operation and professional assistance of the National Archives of Canada. We are most grateful to Dr. Jean-Pierre Wallot, National Archivist, for his continuing interest in our deliberations. It was a great pleasure to work with Mr. Lee McDonald, Director General, Mr. Winston Gomes, Senior Project Officer, and Mr. Robert Czerny, Chief, Professional Development and Publications, all of the Government Records Branch, in developing the programs. I also wish to thank the International Council of Archives and Dr. Siegfrid Büttner, Chairperson, Current Records Committee, ICA, for continuing assistance and cooperation.

Ms. Stephney Ferguson provided skillful chairing and clear direction throughout the discourse. I also wish to extend my thanks to Ms. Christine Kisiedu, who recorded the proceedings, and to all participants who contributed to make the Round Table discussion a significant and fruitful event.

Shahid Akhtar
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INTRODUCTION

The International Council on Archives Symposium on Current Records took place in Ottawa in May 1989, hosted by the National Archives of Canada. The symposium, entitled "Converging Disciplines in the Management of Recorded Information", provided close to 400 participants a forum to review the impact of new technologies on the management of information and to ask fundamental questions on the validity of traditional boundaries of information management disciplines.

A one-day Round Table followed the symposium, organized jointly by the Government Records Branch of the National Archives of Canada and the Information Sciences Division of the International Development Research Centre (IDRC). The aim of the Round Table was to explore further the special problems faced by developing countries in the context of converging disciplines and technologies in the management of recorded information. Specifically, the discussions focussed on common concerns such as professional development and training, handling of traditional and non-traditional records, the use and users of archival records, and the use of new technologies.

Eighteen leading archivists from 12 developing countries were invited by IDRC to participate in the symposium, the Round Table, and additionally, the four-day post-symposium course, "Current Records, Future Use: the Public Role of National Archival Institutions". Using the examples of handling of official records at the National Archives of Canada, the course participants discussed the role of national archival institutions, taking into consideration the realities of respective countries. The invited participants were from Chile, China, Ghana, Guinea, Haiti, India, Jamaica, Malaysia, Senegal, Singapore, Zanzibar and Zimbabwe. Other participants to the symposium were also invited to attend the Round Table, which was chaired by Stephney Ferguson, Director, National Library of Jamaica, and recorded by Christine Kisiedu, Department of Library and Archival Studies, University of Ghana. This publication comprises the full-length papers presented at the Round Table.

The Round Table provided an important opportunity for reviewing the status of archives in developing countries. The Information Sciences Division has had a considerable involvement in strengthening the information infrastructure in the Third World. IDRC's past involvement with archival projects in developing countries reflects the needs expressed by archivists and their struggle towards solving their specific problems. Recognizing the importance of national archives as a principal source for research and national planning, many Third World archivists have fought to gain control of this valuable and elusive national heritage. With understandable urgency, they have pursued accelerated processes for the acquisition and preservation of the nation's recorded information, as well as improved access to it.

The Southeast Asian microform masterlist project of 1974, proposed by the Southeast Asian Regional Branch of the International Council of Archives and supported by IDRC, is an example of an effort to make resources more widely accessible. The project facilitated the planning and preparation of national microfilming programs in the region, and the list now provides information on all documents and publications available on microfiche in the member countries.

IDRC contributed to the "General Conference on the Planning of Archival Development in the Third World", organized by the International Council on Archives in Senegal in 1975. This set the general direction and outlined mutual support mechanisms for archival development. Conference participants representing 45 countries re-affirmed the essential contribution well-organized archives can make "to the achievement of national identity and consciousness, to the economic, social and cultural development and to the progress of scientific and historical research", and resolved to urge governments to integrate the archives in the national development plans. IDRC's support in 1984 to the repatriation proposal by the national archives of Malawi, Zambia and Zimbabwe was a response to their fundamental desire to secure their recorded national heritage and to build new national infrastructures. The project enabled the archives to repatriate the records of the Federation of Rhodesia and Nyasaland in micrographic format to make them the core of the historical records for the three countries.

Identified as the most serious problem time and time again by the archivists in developing countries has been the lack of well-trained personnel in management of official records and archives. Various innovative approaches have addressed this situation and much of IDRC's support has been for initiatives in human resource development. In 1985, IDRC contributed to a one-month workshop on Records Management and Archives Conservation, organized by the Zanzibar National Archives. This pilot project was designed to resolve a dilemma for developing country archives, that is, local training cannot yet provide exposure to well-established professional and technical systems to acquire practical experience, but what is learned abroad is often not applicable in home countries. The special aim of the workshop was to use local resources and local situations to train participants in professional and technical skills. In 1985, IDRC also supported a cooperative project between the National Archives of Senegal and the Public Archives (now National Archives) of Canada to train Senegalese trainers who can in turn establish a training centre and train technicians in the badly needed areas of archival conservation, restoration and reproduction.

IDRC has utilized the invaluable resources of expertise within the National Archives of Canada to support collaborative projects in fulfilling training and consultant requirements. The 1985 "Seminar on the Use of Computers in Archives and the Management of Computer Records", organized by the Archives Committee of the Pan-American Institute of Geography and History, offered the basics in the use of computers in archival work and provided an overview of the selection and care of computer records. The use of MINISIS software at the Public Archives of Canada provided an example of an application of an information management system in archives. A training course on archival handling of audiovisual materials, organized by the Southeast Asia Regional Branch of the International Council of Archives in 1985, was another example of a collaborative training project, in which an expert from the National Film Archives (now the Moving Image and Sound Archives), Public Archives of Canada, was engaged as one of the resource persons for the course.

One important development in East Africa was the regional meeting for permanent/principal secretaries and heads of archival institutions or archives held at Zanzibar in 1987, where senior government officials from Kenya, Tanzania, Uganda, and Zanzibar re-affirmed the necessity of improved records management for efficient public administration and economic development and agreed to provide adequate programs to develop records and archives management.

Through the untiring efforts of archivists, the foundations of archival institutions are now established in most countries: the importance of recorded information to a nation is better

recognized by government officials; mechanisms for regional cooperation in training programs are more firmly established. The Round Table was planned to provide a special occasion for Third World archivists to confirm their achievements, share their experiences, and exchange ideas to solve their problems.

In addition to the following five full-length papers, other participants reported on the current situation of archives and records management in their respective countries. Presentations covered the historical background, salient features of the holdings, and the current status of the archival development. Though each country has its own unique set of problems and is at a different stage of archival development, each speaker reiterated, as remaining problems, shortage of well-qualified personnel, need for appropriate training facilities, absence of records management policy, accumulating records with limited resources, and improved but still insufficient understanding among government officials of the importance of archives and effective records management systems for the nation.

The main presentations, which encompassed topics of pressing concern and of current universal interest, served as starting points for discussion among all participants, in which differing views on priorities and approaches emerged. The chairperson's summary crystalized issues raised during these exchanges:

- The feasibility and advisability of offering joint training programs for archivists, librarians, and records management personnel;
- The advantages and disadvantages of operating archives and libraries under one institutional umbrella;
- The feasibility of using new technologies in developing countries with poorly developed infrastructural support;
- The question of national vs regional training institutions;
- The problem of integrating historical archival practice with modern management information systems;
- The role of non-traditional archives and problems relating to their integration with traditional archives;
- The problems associated with machine-readable records and archives automation;
- The importance of oral history archives in developing countries;
- The potential and use of compound records and hypermedia in information provision;
- The problems associated with the implementation of standard practice in the non-standard situations associated with developing countries.

These questions will remain as a challenge for Third World archivists in coming years, but views exchanged and innovative solutions suggested may serve as a driving force in archival planning.

The Chairperson's remarks at the conclusion, as reported by Ms. Kisiedu, may best summarize the achievements of the Round Table:

- The Round Table did not only look at convergence in the context of what had been discussed in the symposium, but redefined the concept in its own context.

- Care should be exercised regarding specialization in the midst of shortages of professional personnel, resources and adequately developed systems.

- The need for standardization, and for harmonizing training and practice had also been emphasized.

- The relevance of the geographical and cultural aspects of convergence was stressed. Other aspects identified were convergence of language and terminology; of managers' efforts at building infrastructures; in education; and of new technology and traditional practice.

The Round Table was instrumental for participants in establishing a comrades-in-arms relationship through these discourses. The comments expressed by Hassan Bin Mohd of the National Archives of Malaysia may reflect the general sentiments of the participants:

> The Round Table ... provided me with some new ideas on the progress achieved by other developing countries in the management of recorded information. Though it [was] a one-day session, it ... succeeded in providing the opportunity of lively discussion among the participants... [It] provided me a wonderful opportunity to meet fellow archivists from other parts of the world. It ... provided a good occasion to make new friends and establish new contacts.

Atsuko Cooke
Information Sciences Division, IDRC

ADMINISTRATIVE RECORDS MANAGEMENT TRAINING AND PRACTICES IN DEVELOPING COUNTRIES

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ABSTRACT

The management of administrative records has been neglected in most countries of francophone Africa. The importance of this aspect is being recognized, however: a number of training programs in the region now offer courses in records management, although none leads to a specialized diploma in this field. Administrative records management programs need to be designed and implemented in central government agencies of the countries concerned. Regional training programs for archivists, as well as staff upgrading programs, are also required.

INTRODUCTION

The training of specialists in Information Sciences and Records Management has always been a major concern of specialized international organizations. The 1971 UNESCO report on the feasibility of creating a worldwide information system attached great importance to training. To make up for the lag in this area in developing countries, especially in Africa, this issue has been particularly stressed during the last 20 years or so. The number and quality of studies today and the practical initiatives taken by UNESCO and specialized organizations to lay the foundation for sound, effective, and professional education attest to this concern. Although "traditional" records management benefitted greatly from these efforts, it must be admitted that the management of administrative records has not fared well in most of our countries.

Thus, the international symposium on current records of the International Council of Archives (ICA) comes at an opportune time. We hope that it will provide an opportunity to exchange experiences and knowledge, and that its conclusions will have an impact throughout the world. We are interested in records management training and practices in developing countries, particularly in francophone countries. For the sake of convenience, we will use the term "administrative records management" to describe the planning, processing, and management of active and semi-active files. We are aware of the problems raised by this bias, but we remain open to a discussion which would enable all francophones to agree on a single concept for "records management".

DEFINITION AND BACKGROUND OF ADMINISTRATIVE RECORDS MANAGEMENT

According to Gisèle Delage, administrative records management is "all operations and techniques related to the design, development, implementation, and evaluation of the administrative systems required from the time documents are created until they are destroyed or transferred to the archives."[1] This discipline originated in the United States in the private sector, which was concerned with initiating more efficient and more cost-effective management methods. Yves Perotin notes that "in the second half of the nineteenth century, ... industry, which began to require real offices, developed economical and rational methods for managing papers".[2] The public sector is also affected by the continuing proliferation of documents. Several commissions dealt with the subject, but it was the 1947 Hoover Commission which, to its credit, first proposed solutions "to re-orient record-keeping so as to stem the flood of information directly at its source".[3]

Other countries facing the same problem followed the American example. The Grigg Commission in Great Britain in 1952 and the Massey Commission in Canada in 1953 sought the same objectives. Today, no country escapes the phenomenon that Michel Duchein calls "the archival revolution". Public and private bureaucracies produce increasingly vast quantities of documents. The continued smooth operation of organizations and the preservation of a country's historical heritage depend on organizing this mass of material scientifically. Both require rational control, before and after administrative documents are produced. Although the second stage -- the handling of historic records -- is increasingly better-managed in our countries, the first stage, involving the management of administrative records, remains largely unrecognized, at least in practice. Sound practical training and coherent policies are required to correct this situation. Both must meet several requirements.

REQUIREMENTS FOR A RECORDS MANAGEMENT POLICY IN DEVELOPING COUNTRIES

Several years ago, René Dumont wrote: "The chief 'industry' of countries overseas is now administration ... As it is now understood, [administration] will lead these countries to ruin".[4] Indeed, it can be said that the production of administrative documents is the field in which developing countries are most competitive. Despite their small sizes, they produce masses of documents and information. Their national record-keeping services, given their lack of resources and narrow mandate, are not yet able to integrate the management of administrative documents properly. We are convinced that, in any country, a development plan cannot be introduced without records management for the following reasons.

Public Authorities Must Be Accountable

Although an organization, especially a government, is required to exercise discretion, even secrecy, the right to information is basic in any democratic society today. This right is not limited to freedom of the press or even freedom of expression, as one might at first think. It also includes the citizen's right to be informed about the government's conduct of public affairs. Free access to government documents, which is a corollary of this right, is a democratic necessity. This requirement is the reason why freedom of information and privacy laws have been passed in many countries.[5]

Like the law passed in Québec, all are based on the principle that any person or corporation has access to the documents held by public bodies.[6] The only limits on the application of such provisions are the need to protect personal information and to assure the public service confidentiality and secrecy when needed.

Such laws must be accompanied by technical measures. In particular, they require public bodies to have structures, policies, and personnel for handling, preserving, and communicating public documents. This situation also provides employment opportunities for trained people and a way to apply and compare the theory and the practice of records management. Above all, it ensures government accountability. To our knowledge, such legislation does not yet exist in our region nor is there any political will in that direction. The archives laws and the statutes for record-handling personnel which have been passed in many places in recent years cannot make up for this shortcoming.

Public Authorities Must Meet Quality, Efficiency, and Cost Requirements

Some 10 years ago, Charles Kecskéméti pointed out "a costly absurdity -- governments without record-keeping services"[7] in Francophone Africa. This situation still persists in our countries. Government officials continue to make major decisions without always having access to relevant information because qualified information services are lacking. Recent studies of the information requirements of governments in some African countries point to the cost of such practices.[8] If "managing is deciding", as Herbert A. Simon says, any administrative decision made by an individual or corporate entity is a choice among several possibilities. The best is always undeniably the most documented, not counting the decision-maker's experience and ability. As Rolland Hurtubise very rightly points out, "the first step in the decision-making process is the accumulation of information in a given situation".[9]

The implementation of management information systems (MIS) in government agencies places the archivist at the centre of decision-making activities. The basic primary information is generated by organizations during their operations. Together with the secondary information collected outside the organization, it gives the MIS a major role in any public or private organization. Indeed, it helps "to ensure the consistency of information for the quality of decision-making and the management of the organization".[10]

From this point of view, the management of administrative documents, considered as an essential element of any integrated information system, contributes to administrative efficiency. It helps to reduce operating costs by saving space, time needed for decision-making, and equipment for storage and preservation.[11] It increases the cost-effectiveness of administrative services through more enlightened and better-informed decisions and helps to justify administrative operating costs. For these and other reasons, training in administrative records management and putting this training into practice are necessities in our countries.

ADMINISTRATIVE RECORDS MANAGEMENT TRAINING AND PRACTICE IN FRANCOPHONE AFRICA

Training

To our knowledge, there is no training program leading to a specialized diploma in records management. Existing courses in the various schools surveyed are quite rightly integrated with sections or departments of Archival Sciences. This seems all the more appropriate in that it firmly establishes the most dynamic concept of comprehensive or integrated records management. We do not think it appropriate to stop at any stages of records management. Rather, they should be harmoniously combined in an approach encompassing the creation and the use of administrative documents throughout their life cycle. The *Service central d'organisation et méthodes* (SCOM) in France rightly understands this approach, as the following quotation shows: "It must not be forgotten that the organization of archives begins in offices when the records are produced and that the distinction between current records and historical ones, made for convenience of handling, is, in fact, artificial: they are the same records, and at least some of them used today will become permanent or historical, once they have reached a certain age. Therefore, government departments should participate from the time records are created and first filed so that they may apply certain rules as much for their own record-keeping as for transferring the records to the central depository when they have lost their current usefulness".[12]

It is our belief that the rules in question concern the management of administrative documents. Each central administrative structure must set up a service to process and to preserve active and semi-active documents; to turn over inactive ones to the central archives; or to eliminate them. These important steps in the management of administrative information are the responsibility of the records manager who is also an archivist. But how are such professionals now trained in our region?

Training Criteria

As a starting point for discussion, we take the training courses given in Rabat (School of Information Sciences), Algiers (Institute of Library and Documentary Sciences at the University of Algiers), Tunis (Institute of Media and Information Sciences), Dakar (School of Librarians, Archivists and Documentalists at Cheikh Anta Diop University) and Cotonou (Administrative Training and Development Centre, Information Science and Technology Training Program at the National University of Benin). We are aware of information science training programs begun in the Ivory Coast, Gabon, Zaire and Rwanda, but cannot discuss them here for lack of relevant information on their activities and their impact on the working environment.

The training philosophy in these schools is usually based on two complementary needs: the need for middle managers and the need for senior managers. The various schools, therefore, have at least two two-year training programs at different levels. Algiers and Cotonou are an exception: they have a three-year, full diploma program. Rabat offers a three-year bachelor's program for information specialists which leads to further study at the doctoral level. Tunis and Dakar have opted for basic and advanced programs.

Generally, the minimum requirement for admission to the bachelor's program is the French *baccalauréat* (high school leaving certificate). The special entrance exam offered at Dakar for those who do not have a *baccalauréat* has little effect on the number of admissions. A selective

admission process is also common, whether by means of entrance exams or competitions. While limiting the number of students so that professional instruction can be more personal, this strict selection ensures that the incoming students are of high calibre. The basic two- or three-year training programs are meant to produce technicians who can master the full range of tasks involved in archival processing of records. The master's program in Dakar and the doctoral program in Rabat are intended to produce senior managers who can administer, manage and direct records management services, guide research on the planning of national records services, and design policies and plans to develop documentation in general.

Practical assignments are very important in all of these training programs. In Tunis, the student has a choice of a professional training assignment or a thesis, each of which is worth two credits. In Algiers, the training is spread over eight semesters, separated by eight practical assignments of ten half-days each, plus audio-visual training. In Dakar, every year of study, at both levels, includes at least one month of required practical training.

The Place of Records Management Education in Training Programs

Archival science in general and records management in particular can be classified as administrative technologies. In every country, therefore, these technologies draw on the surrounding government apparatus. Michael Cook rightly points this out when he writes: "the nature of archives and the systems which produce them are so deeply rooted in the cultural and administrative tradition of every country that it is difficult to make valid generalizations without taking into account cultural and linguistic factors."[13] This explains why it is easier to introduce records management into educational practices than into administrative structures. The schools of information science that we have mentioned are open to the outside world through inter-university co-operation and are gradually including administrative records management in their teaching.

Although Tunis and Algiers, whose programs are mainly concerned with library science and communication, offer no courses in records management, such is not the case for the other schools. Rabat has a records management course at the doctoral level for information specialists. But it seems to us that its inclusion in the administrative documentation module is not conducive to its development as an independent discipline. This situation can also be misleading. The Dakar program, at the undergraduate level, is called "records management and intermediate storage". The annual course load is 50 hours. The master's program is called "management of current documents and contemporary archives" and runs for 50 hours. Cotonou offers a first-year course entitled "records management -- living archives and intermediate storage" for 40 hours a year. A second-year course, called "handling government publications, administrative records and documents of international organizations", is also offered.

Despite the lack of detailed descriptions of the content of these courses or the curricula, we can make several observations:

- the lack of uniformity in the theoretical approaches to instruction. This is partly due to the novelty of these courses, which are still being elaborated, but especially to the difficulty of translating into French what is essentially a North American concept;

- the relationship between records management and the records centre. Although they are open to the different archival practices, the countries concerned still remain very attached to French administrative traditions inherited from the colonial period. This has repercussions in the way they set up and organize their archives. The relationship between

records management and the records centre, although not harmful in itself, involves grouping two quite distinct entities. While they are certainly not opposed, it should be noted that they require different theoretical and practical approaches;

- the lack of practical assignments for students: the field work, such as visits to the archives, involves historical archival material, resulting in the lack of coherent records management practices in public organizations.

Records Management Practices

There is a distinction between the theory and practices of records management in Francophone Africa. Although interesting advances are being made in terms of training, very little has happened yet on a practical level. While the regulation of archives has progressed somewhat in recent years, the general concept of the goals and purposes of record-keeping still prevent inclusion of records management. In spite of the warning issued several years ago by an expert from the International Council on Archives that "the reputation of archives is still hopelessly cultural and scientific", their potential contribution to government administration is still largely untapped. Although archivists, especially those in administrative organizations, no longer consider their services exclusively as "the laboratory of historical research", they experience both theoretical and practical difficulties in assuming their role of records managers. The results of a seminar on this issue organized by the West African Regional Branch of ICA attest to this deficiency, at least as far as West Africa is concerned.[14]

The design, organization, and objectives of the archives in Senegal, the Ivory Coast, Benin, and other countries do not provide archivists with the opportunity to apply records management techniques. Records management is not part of national programs for the central registries. Still more recently, further to an investigation of the situation of record-keeping in Francophone West Africa,[15] an evaluation meeting drew attention to this deficiency. Thus, the subcommission on archives development policy and planning in the region recommended, among other things, distinguishing the two aspects, current records and historical archives, in national plans. The first subprogram deals with the organization and handling of active and semi-active records. It recommends that the central government agencies of the countries concerned adopt records management programs and that they bear the costs of equipment and personnel themselves. The national archives of each country will be responsible for the overall design, gradual implementation, and technical control. They must develop manuals, as well as general and specialized technical guides, and ensure standardization of working procedures. To enhance the likelihood of success of the transition from the old to the new comprehensive archive concept, the Dakar seminar recommended setting up one or two experimental programs in each country. These programs would be implemented in key departments or agencies that, after assessment, could be used as a reference for gradual coverage of all central government agencies. The national archives and training schools are called upon to contribute to the design of this plan.

PROSPECTS FOR RECORDS MANAGEMENT IN FRANCOPHONE AFRICA

Training

Despite variations among countries, it can be said that French-speaking areas are better served than English- and Portuguese-speaking areas. For example, a recent expert report stated that, in the English-speaking countries, "no real university-level information sciences program has been fully established".[16] In the Portuguese-speaking countries not even specialized training exists. Cape Verde, for example, has to send its students to Senegal. The training is longer and more expensive because the students have to learn French before they can attend the School of Librarians, Archivists and Documentalists (EBAD). The many varied programs in the francophone countries require permanent linkages in order to coordinate all possible aspects and to pool experience.

Another current debate concerns whether training should be in national or regional schools. A team of experts from UNESCO and IDRC suggested that a "program could be regional, that is, financed by several governments, or could be national and accept students from other countries".[17] Like us, they prefer the second option because of its flexibility and easier management when only one decision-making centre is involved. Several other arguments can be invoked, such as the lack of material and human resources in each country to open a training centre, the advantage of shared experience through a regional centre, the possibility of standardizing approaches in different countries from a common training centre, and the co-ordination and development of integrated research from a focal point. It seems obvious that the regional training program(s) will be open not only to students from the surrounding countries, but also to teachers of all nationalities who have the required qualifications.

Continuing Education and Training

There is a real demand for this. For example, between 1968 and 1987 EBAD trained 1 083 information science professionals, including 286 archivists, from 23 African countries. Nearly half of these archivists received no training in records management during their studies. The need to retrain some of them and to offer an introductory course to others is obvious. Once the needs of the countries and the region are assessed, some thought must be given to the practicalities of organizing intensive regional or national records management training sessions, to avoid wasted effort and to make maximum use of the available human resources. Furthermore, many professionals working in the central archives of our countries have received only on-the-job training. They need continuing education courses in order to be promoted and to increase their income.

PLANNING AN ALL-INCLUSIVE APPROACH TO ARCHIVAL MANAGEMENT

Planning

Despite underdevelopment, our societies are gradually entering the information age. They are taking part in the archival revolution. The only way they can avoid the proliferation of documents is by adopting appropriate systems. In this regard, the planning of archival development is a necessity. As other specialists do in their fields, archivists in every country must develop an

archival plan after thoroughly researching requirements and analyzing available and needed resources. This plan will specify the short-, medium-, and long-term goals and how to attain them, with time frames.

This planned, measured approach seems to be the only way to give a solid grounding to a neglected, misunderstood function. By broadening the discussion among researchers, administrators and decision-makers, the national archives will have to guide each country's committee monitoring the implementation of the records management program plan. This plan will be the best argument records managers can present to government officials because it will be their contribution to economic, social, and cultural development. The passive role of record-keeping will be eliminated through scientific arguments showing that "records management can contribute to national and regional development in proportion to the resources invested in it ... but only if it is planned as part of appropriate development planning."[18] This key objective can be attained only as part of an all-inclusive approach to records management.

All-Inclusive Approach

Although some countries can afford the luxury of distinguishing between, or even contrasting, historical archives and records management, our limited resources, as well as a proper understanding of theoretical requirements, prevent us from doing so. While the management of historical archives and of administrative documents can be taught through different, but necessarily complementary, courses, the two cannot be distinguished in practice, especially from the viewpoint of national or regional planning. As Michael Cook says, "it is particularly important that records management not be considered as a totally separate subject with no connection to its cultural use or the search for sources of information; that it should be concerned only with efficiency and cost-effectiveness within an administration."[19] The all-inclusive approach enables archivists to take account of the concerns of government bodies and of scientific research in a systematic way. It seeks to restore the archives to their true role of "research laboratory and management tool".

CONCLUSION

The training of archivists is one of the key issues of the debate in our profession today. It is one of the priorities in the second UNESCO plan for the medium term. Beyond the specific aspects, this need is part of a process of convergence involving all sectors that manage recorded information. The invasion of data processing and the handling of machine-language documents, micrographics, and the proper management of document structures are all unavoidable issues for information sciences specialists. How these issues are dealt with and the specific contribution each sector makes will depend on the quality of training provided or to be provided. But that is not sufficient. A clearly stated political will is required, for, as Michael Cook says, "training programs for archivists ... that have some chance of success are those designed in a context where the public authorities have modern development objectives and are aware of the interest of efficient administration."[20]

Such training, together with coherent and complete legislation and professional statutes that provide incentives, is the best assurance of our societies' smooth entry into the information age.

NOTES

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2. Yves Perotin, *Le Records management et l'administration américaine des archives. Rapport de mission adressée à M. le Préfet de la Seine* (Archives de la Seine et de la ville de Paris, 1962) p. 9.

3. Perotin.

4. Quoted by Karoly Kecskéméti in *Archives, développement et souveraineté nationale*, p. 2.

5. Such legislation exists in France, the United States, Canada, and Quebec.

6. Government of Québec, Department of Communications, *La loi 65 en questions ... et réponses*, (Québec, 1983) p. 1.

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8. Samba Gueye, *Les pratiques informatives et les besoins en information dans l'administration centrale sénégalaise: étude de cas*, Thesis (Dakar: EBAD, 1986); Edouard Nzinno, *L'information documentaire dans l'administration centrale congolaise: rôle majeur des archives*, Thesis (Brazzaville: École nationale d'administration et de magistrature, 1985).

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10. Hurtubise, p. 20.

11. Marcel Caya, "Rentabilité et gestion des documents," *Archives, revue de l'Association des Archivistes du Québec*, 14 (March 1983): 12-19.

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14. Saliou Mbaye, "Problèmes des archives et de la gestion des dossiers en Afrique de l'ouest francophone", Paper presented to the Records Management Seminar, Jos, November 20-25, 1983, *Gazette des Archives*, 127, (4th Quarter, 1984): 287.

15. Investigation by Henri Sène, Antoine Tendeng (Cheikh Anta Diop University, Dakar) and Bernard Weilbrenner (National Archives of Canada) for the International Council on Archives and the Canadian International Development Agency, January 1988.

16. Kenneth H. Roberts, *A regional postgraduate information science program in English-speaking Africa. Site selection* (Ottawa: UNESCO/IDRC, 1987).

17. Roberts, p. 13.

18. Cook, p. 20.

19. Cook, p. 33.

20. Cook, p. 5.

THE MANAGEMENT OF TRADITIONAL AND NON-TRADITIONAL RECORDS IN SOUTHEAST ASIA: MALAYSIA AND SINGAPORE

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ABSTRACT
The archival profession has evolved slowly in Southeast Asia, but thanks to national, regional and international efforts, Malaysia and Singapore now have adequate teams of trained archivists. Southeast Asian archives have developed sound infrastructures and expertise in the management of paper-based records as well as multi-media holdings. The advent of computerization in the public service, however, has led to the creation of large quantities of machine-readable records. Archivists face a difficult task in the appraisal, processing and preservation of these records. They are now being trained to do so and have embarked on the automation of archival operations.

BACKGROUND

The first concern of Southeast Asian archivists was managing paper-based traditional records, including official minutes, reports, legal documents, maps, plans, royal decrees, treaties, etc., in the colonial administrative languages. The evolution of the archival profession to deal with these traditional records was slow and painstaking. The immediate post-war era was crucial to archival development in the Southeast Asian region. During this period, national archival institutions emerged in the newly-independent nations. Some archival establishments had existed during the colonial period -- the Dutch Government set up central archives in Indonesia in 1892, for example, to preserve historical public records -- but their sole purpose was to serve the interests of colonial administrations. In 1957, the Government of Malaysia set up its national archives. The other countries followed suit and established national archives. By 1968, all Southeast Asian countries had proper national archives.

EVOLUTION OF THE ARCHIVAL PROFESSION

The problems faced by Southeast Asian archivists during the initial period were many. Of paramount importance was the training of personnel to handle the vast quantity of colonial records and the post-war non-current records created by government agencies of the newly-independent countries. Expertise in appraisal, description, preservation, etc., was lacking during the early period. Creating a pool of trained archivists required a national effort in individual countries as well as regional and international co-operation.

The National Effort in the Training of Archivists

A good example was set by the National Archives of Malaysia. The Malaysian Government adopted a progressive policy toward staffing and professional training for their archivists. Staff were sent overseas to India, the United Kingdom, and the United States for training in archival administration and in records management. Today, the National Archives of Malaysia have trained 43 archivists. At the same time, senior archivists went overseas for short upgrading courses to keep abreast of the latest developments.

Other national archives in the region also progressively developed their local archivists. For instance, in the mid 1970s, Singapore and Indonesia had four and two trained archivists, respectively. Today both countries have an adequate team of trained archivists to carry on their archival work. The Indonesian Archives are currently taking a further step and are setting up a training school affiliated to a university. The Malaysian Archives also plan to establish a similar training school.

International and Regional Cooperation in the Training of Archivists

To complement the national efforts in developing their local archivists, the archives in the region also depended heavily on international co-operation. As institutional members of the International Council on Archives (ICA), archivists attended conferences, seminars, and workshops which helped them to keep up-to-date with archival developments in the industrialized world. Literature published by ICA is a useful reference tool, helping archivists upgrade their knowledge of archival management. The setting-up of the Southeast Asian Regional Branch of the International Council on Archives (SARBICA) in 1968 has been instrumental in shaping archival development in this region. SARBICA's members are Brunei, Indonesia, Malaysia, Thailand, the Philippines, and Singapore. Its objectives are:

- to establish co-operation among fellow archivists and their relevant organizations within the region;
- to promote measures for administering and preserving archival heritage;
- to facilitate the use of archives by making them available for research;
- to promote and to organize activities in the field of archives within the region;
- to sponsor training of archivists; and
- to support and to facilitate the realization of ICA's aims and objectives.

In conjunction with their conferences, SARBICA organized seminars and courses on archives management, for instance: the Seminar on Tropical Archivology (1969); the Seminar on Records Management (1976); the Course on Microfilming and Microfilms (1979, 1980); the Training Course in Archival Processing of Audio-Visual Materials (1986); and the Seminar on Access and Use of Archives (1987). These seminars and training courses provided opportunities for Southeast Asian archivists, not only to upgrade their knowledge and skills, but also to exchange views on professional matters. They also helped to foster regional co-operation and goodwill.

SARBICA, with an annual grant from ICA, also publishes the *Journal of Southeast Asian Archives*. To date, nine issues have been published. Contents of the journal include proceedings of SARBICA conferences, seminars, articles, and information on archival holdings and the development of archival institutions. SARBICA's members played an active role in ICA's compilation of the Guide to the *Sources of Asian History*. The National Archives of Malaysia have published their guide, and the Singapore volume will be published in mid-1989.

Bilateral Cooperation

Malaysian archivists not only play a leading role in SARBICA, but have also imparted their knowledge and expertise to their Southeast Asian colleagues. They offer training opportunities, such as courses on conservation and records management, to the archives staff of Brunei, Indonesia, Singapore, Thailand, etc. The Singapore National Archives have developed an advanced micrographic system and conduct an annual training course on micrographics.

EXPANDING THE ARCHIVAL PROFESSION

Although archival institutions were not directly involved in records management in the past, the trend has changed since the mid-1960s as archivists have become increasingly aware that the problems of appraisal, description and arrangement originate at the sources -- when and where records are created in agencies. This awareness is reflected in archival legislation adopted by national archives in the region. In order to improve the standard of records management, a regional Seminar of Records Management was held in Jakarta in 1976. The main topics of the seminar included record creation and control; classification system and practice; policy and process, and modern record appraisal.

After the seminar, Singapore and some other countries implemented recommended measures. For example, Singapore set up a file classification committee to draw up standard file classifications for common-user records. In addition, Departmental Record Officers (DROs) have been appointed to be in charge of departmental records management. Malaysian archives have set up a Records Management Division which has been active in training the DROs, in drawing up appraisal criteria, and in producing instruction manuals on records management.

NON-TRADITIONAL RECORDS

Until 1980, Southeast Asian archivists were mainly preoccupied with traditional paper-based records. With the advent of modern information technology, the trends in archives

management have changed significantly. In addition to paper-based records, the archivists now also have to deal with audio-visual archives, machine-readable records, etc.

Audio-Visual Archives

National archives in the region recognize that audio-visual archives are a valuable record of non-political, economic and social development and achievement in their respective nations. These materials, including cinematographic, television and videographic productions as well as audio recordings, form an important part of the cultural heritage. Due to the characteristics of their material components and to the various methods of their fixation, each of these audio-visual documents requires different technical measures to ensure its long-term survival. Specific conditions such as environmental controls in the repository are essential. Specialized equipment is also needed for processing, cataloguing, and reconditioning. National archival institutions in the region have therefore established audio-visual archives under their administrative umbrella.

In order to equip archivists to manage these audio-visual collections, regional seminars were conducted in Manila in 1981 and 1984. Experts were retained to conduct training courses. Sam Kula, of Public Archives Canada, and Helen Harrison, Secretary-General of IASA, conducted such courses in Kuala Lumpur and Singapore, respectively, in January and February of 1986. The Philippines and Brunei sent their trainees to the course held in Singapore. Archival institutions have also embarked on a more dynamic program to acquire and preserve audio-visual materials. In Indonesia, a 10-storey building for Audio-Visual Archives was constructed in 1984. Since the completion of a new archives building in 1983, Malaysia's Archives have been actively acquiring audio-visual materials. It now has a collection of 4 840 reels of film, 430 reels of audio tapes, 8 000 gramophone discs and some video tapes. The National Archives of Singapore have plans to set up a well-equipped unit to handle audio-visual archives.

Oral History Recordings

Oral interview is a technique which historians use to gather information for the writing of history. Recently, certain research institutions, such as the Institute of Southeast Asian Studies, have also adopted oral history methodology to record reminiscences of well-known personalities and common people for research purposes. However, the setting up of a regular oral history program on a national scale is a recent development in Southeast Asia. For example, Malaysia started its oral history program in the early 1960s.

In Singapore, oral history recordings have also been recognized as important and useful historical sources. An expert consultant, David Lance of the Imperial War Museum, London, was engaged in 1979 to plan and launch an oral history program at the National Archives. The Oral History Department, which became a separate functional department in 1985, has been active in documenting Singapore's social, political, and economic history. The department has completed two projects, *The Pioneers of Singapore* and *Japanese Occupation*, and is now working on eight other projects such as *Political Development of Singapore*, *Communities of Singapore*, *Chinese Dialect Groups*, *Vanishing Trades*, etc. It now has a collection of 5 000 hours of recorded interviews with 995 people. The master tapes of 7-inch open-reel format are kept in an environmentally-controlled tape repository. In order to disseminate information on these oral history recordings, the department has published a series of catalogues (*Pioneers of Singapore*, *Syonan - Singapore Under The Japanese*, and *Communities of Singapore*), booklets (*A Battle to be Remembered*, *The Oral History Manual*), and some educational packages. It provides training to people interested in oral

history methodology. In conjunction with the Singapore Broadcasting Corporation, a series entitled *People and Places* was produced.

The National Archives of Malaysia also started their oral history program in early 1960. They have undertaken another interesting program using both oral history techniques and video technology to document personal recollections of interviewees on videotape. The recording was done before a live audience who could participate by raising questions or making comments. To date, they have completed 32 interviews on political, economic, social, and cultural developments of the nation.

Machine-Readable Records and Archives Automation

Computerization in public administration started in the early 1960s. In the '70s and '80s, machine-readable records found their way into the archival institutions in the region. The National Archives of Malaysia have begun an acquisition program for the preservation of these records.

In Singapore, the Civil Service Computerization Program started in 1963 with the setting up of the Computer Services Department with the Ministry of Finance. The department embarked on several computer projects such as the computerization of examination results, the registration of vehicles, the electoral registration system, etc. In an effort to improve productivity in the Civil Service, the Management Services Department undertook a project study on mechanization and computerization in the Civil Service in 1980. It recommended a civil service-wide computerization program. A Committee on National Computerization was formed at the same time. As a result, the National Computer Board was formed to undertake the following tasks:

- to implement computerization in the Civil Service, to be known as the Civil Service Computerization Program;
- to co-ordinate computer education and training; and
- to develop and to promote the computer industry.

The Civil Service Computerization Program progressed at a rapid pace. By 1985, systems studies of the computerization requirements were almost completed. There were also hardware systems installed by a number of ministries and departments such as Communications and Information, Home Affairs, Health, National Development, Trade and Industry, and the National Library. By the end of 1988, the Program had created an extensive computing and database infrastructure for the government. Altogether, 67 mainframes and mini-computers were installed by 20 government ministries and departments. To date, 44 applications have been developed and 88 computer applications are under development. Given the large-scale program initiated in the early 1980s, the quantity of machine-readable records in the form of magnetic tapes and disks created is tremendous. The Singapore archivists face the problem of appraising, acquiring, preserving and utilizing this vast quantity of new materials. The archivists need to be trained in order to become computer literate. Archivists at other institutions in the region face the same problems because their past training was geared towards conventional records. Awareness of their new training need has been recognized and training courses have been proposed at the regional level under the ASEAN (Association of South East Asian Nations)/Canada Technical Co-operation Scheme. This is still at the negotiation stage.

In addition to regional efforts, national archives have also made individual efforts in staff training. Malaysian archivists have been sent overseas for training in archives automation; Singapore archivists have undergone training in the handling of computers, such as information system planning, database applications, etc.

The Southeast Asian archivists recognize the usefulness of computer technology for archival applications such as the compilation of indexes, guides, and other finding aids. The Malaysian archivists use micro-computers for compiling indexes for their collection of private papers. In Singapore, micro-computers are also used for compiling catalogues of photographs, school records, etc.

Computer technology is also useful for records management. In Singapore in 1979, the Management Services Department and the National Archives jointly conducted a survey of records management in the civil service. The report pointed out that records management operations, such as file classification, maintenance, control, and disposal, are a series of logical and routine actions which lend themselves to computerization. The report thus recommended the use of computers for the purpose. To begin, a first records management system was installed for the Ministry of Finance. In the following year, a similar system was adopted by the Ministry of Health. In 1986, the National Archives participated in the Civil Service Productivity Campaign and a model automated registry featuring records management computer applications was displayed at an exhibition. This increased the awareness of records management automation.

As a result, more and more government agencies either have adopted or are planning to adopt this system. More than 25 agencies now use such a system. As more government agencies embark on records management automation, the National Archives will need to standardize all registry procedures and to work in conjunction with the National Computer Board and the Management Services Department to develop a common records management software package for the entire civil service. It is also envisaged that computer networking through the host computer at the National Archives will enable Archives to monitor the functioning of departmental records management programs. In addition to registry functions, the proposed software will include automatic listing of non-current records for appraisal. This is essential because the department is suffering from an acute shortage of personnel and is therefore hesitant to release staff to list non-current records for review or transfer. With the installation of records management networking, the Singapore archivists hope to cope with the backlog of inactive files.

Micrographics

Traditionally, micrographics has been adopted as a means of preserving and duplicating documents for security purposes. The Malaysian Archives set up a microfilm unit in 1966 to microfilm archival records, rare books, and newspapers. The National Library of Singapore has provided services since the early 1960s for microfilming archival materials. The National Archives of Singapore took over the functions from the National Library and set up its own Micrographics Unit. The Unit not only provides in-house microfilming services of archival materials, but also helps other government agencies set up various micrographics systems, ensures that the appropriate equipment is purchased, and ensures that high microfilming standards are maintained. The first training course on microfilming in this region was sponsored by SARBICA and was conducted at the end of 1970 in Kuala Lumpur and in Singapore. Mr. Jim Keen of the Public Records Office, UK, conducted the course in Singapore, attended by officers of various government agencies with in-house micrographics systems.

In addition, a local society, the Micrographics Society of Singapore, was set up in 1980 to promote the use of micrographics in Singapore. The society held seminars and trade fairs to upgrade knowledge and expertise in micrographics. An international seminar, jointly organized by the society and the International Information Management Congress, was held in Singapore in 1984.

The usefulness of micrographics as a records management tool is generally well recognized. With the advance of modern micrographic technology, micrographic systems, especially the computer-aided retrieval (CAR) system, has created new micrographic applications in government agencies and in the private sector. For instance, the Immigration Department and the Integrated Land Use System have installed CAR systems, and 35 government agencies now use micrographics systems to store and retrieve written information. In order to keep the users abreast of the latest developments, the National Archives of Singapore conduct an annual training course on micrographics for government users. The training opportunity is also open to users in neighbouring countries. More and more private companies, especially banks and multi-national companies, are also adopting micrographics to solve their record management problems.

On a regional basis, SARBICA also plays an active role. In order to reduce duplication of work done by various institutions, SARBICA, together with the Conference of Southeast Asian Librarians (CONSAL), has formed a committee which meets once a year. In 1978, SARBICA and CONSAL, with funds from IDRC, published a *Masterlist of Southeast Asian Microforms*. The supplementary volume of the Masterlist has been undertaken by the Singapore National Library and published in microfiche form. In conjunction with the Institute of Southeast Asian Studies, SARBICA also published the *Southeast Asian Microfilm Newsletter* to provide the latest information on the subject. The bi-annual newsletter is published thanks to an annual grant from UNESCO.

CONCLUSION

Although different in form and requiring different processing and handling know-how, traditional and non-traditional records are integral parts of a cultural heritage. They are of equal value and importance as reference tools. Archives in Southeast Asia have developed a sound archival infrastructure and expertise in the management of paper-based records and other media such as moving images, sound recordings, and micrographics. With the adoption of new information technology by public agencies, such as computer and optical disk document retrieval systems, an increasing amount of information is created and stored in machine-readable media. There is a difficult task ahead for archivists in the appraisal, processing and preservation of this new generation of records. Archivists must also use modern information technology to automate various archival operations and thus to improve further their productivity. SARBICA has been, and will still be, instrumental in fostering regional co-operation in the development of the archival profession. In addition, greater national efforts are required, especially in providing professional training for archivists in order to equip them to cope with the difficult tasks ahead.

USE AND USERS OF RECORDED INFORMATION

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ABSTRACT
In Zimbabwe, as in most developing countries, most of the information work is done by libraries of various types as well as by research institutions such as the National Archives. Information is required for various reasons and by different categories of users. The kind of library or institution providing the information does not matter; what does is that users are made aware of the services offered, of the sources available, and of the accessibility of materials. In order to serve the users adequately, collections need to be well described and the public must be made aware of them through guides, inventories and bibliographies. The information needs of rural and illiterate people should not be forgotten.

INTRODUCTION

In Zimbabwe, as in most developing countries, most of the information work is carried out through libraries of one type or another and through research institutions such as the National Archives of Zimbabwe.

This paper describes the National Archives of Zimbabwe, because of its structure which brings collections of different media under its roof. It includes a Library, Public Archives, Private Archives or "Historical Manuscripts", Oral History and Audio-Visual Sections. Researchers visiting the National Archives can obtain information by referring to public archives, historical manuscripts, oral history interviews, audio-visual materials or printed publications. Depending on the nature of the inquiry, a researcher might rely on only one or on all of these sources. This paper will outline the various sections of the National Archives, their collections, the use and users.

THE NATIONAL ARCHIVES OF ZIMBABWE AND THE COLLECTIONS

Together, the sections of the National Archives make it the custodian of the nation's heritage and history. They thus occupy "a key position in Zimbabwe's documentation and information network as the centralizing agency for both official and unofficial published and unpublished documentation relating to the country."[1]

To ensure the quality and safety of the records that eventually become public archives, the National Archives provide a records management service to central government, local authorities and parastatals. They thus ensure the controlled creation, utilization and disposal of records, while

arranging for the permanent preservation of those identified as being of historical and continuing value.

The Public Archives

The Public Archives consist of records of central government of more than 25 years old that have been set aside for permanent preservation because of their historical and administrative importance. Most of the public archives are open to the public. These archives are described in inventories and guides supplemented by indexes.

Printed Publications

The Library, whose main function is to acquire, for permanent preservation, a copy of every work published in or about Zimbabwe or by a Zimbabwean, regardless of subject, form or language, contains the most comprehensive collection in existence of printed matter (books, pamphlets, newspapers and periodicals) relating to Zimbabwe. Official government publications are included.

The Library receives locally-published material by legal deposit which is governed by the Printed Publication Act of 1975. The Library also performs some of the functions of a national library, including the annual compilation of the Zimbabwe National Bibliography.

Historical Manuscripts

The Historical Manuscripts collection contains unofficial records -- letters, diaries and other papers -- created by individuals and corporate bodies. Historical manuscripts are highly desirable as historical evidence because they give personal perspectives of events, thus complementing public archives which portray people in their official capacity. The historical manuscripts collection contains records of politicians, administrators -- both colonial and postindependence -- missionaries, hunters, explorers, prospectors and many other people who have played a part in the development of the country.

Audio-Visual Material

The Audio-Visual Section aims to collect and preserve non-print materials for their historical value and for the use of researchers. The audio-visual collection includes films, gramophone records, microforms, videotapes, slides, photographs, maps, posters and audio cassette tapes. Plans are under way to collect magnetic tapes. Worth noting are the *Voice of Zimbabwe* programs, broadcast from Mozambique by exiled political leaders during the liberation struggle. These include songs and speeches made during gatherings of freedom fighters and villagers, and interviews with various freedom fighters most of whom are now prominent government officials, notably President Robert Mugabe.

The film collection includes unique documentary films produced by the Ministry of Information. The pictorial collection includes posters and photographs as well as paintings by outstanding artists such as Thomas Baines. The photographs cover all aspects of the nation's life from its earliest times to the present day. The map collection consists of maps and plans from the earliest archaic maps of Africa, down to the most recent sheets produced by Zimbabwe's Surveyor-

General's Department. The gramophone records are those produced in the country. Some of the songs record social, economic and political aspects of the country. An important project to be undertaken by the Audio-Visual Section is the recording and preservation of selected Zimbabwe television programs.

The Audio-Visual Section microfilms historical documents for preservation purposes. Many of the earliest documents are too fragile to be handled by researchers. Microfilm copies of these are provided so that they may remain accessible to the public.

Oral History

I mentioned earlier in this paper that the historical manuscripts collection includes papers of people who have contributed to the development of this country. It is worth pointing out that most of the earlier papers are of the white people. This is partly due to the inability of most blacks to write, and partly to a deliberate colonial policy to collect materials from the white community only. African nationalists who could have written about their activities destroyed the material due to fear of being prosecuted by the colonial regime. This gap has been filled by the National Archives Oral History and Oral Traditions Programs. Those who have contributed to, or are able to throw light on, the nation's development and historical background are interviewed by oral historians on staff. These interviews are recorded on tape and then transcribed: the transcriptions are translated from the vernacular into English. There are three programs reflecting the three major languages in the country: English, Shona, and Ndebele.

Through oral history interviews much has been learned about major events such as the Ndebele Uprisings of 1893, the Chimurenga War of 1896, and the War of Liberation which gave Zimbabwe its independence in 1980. The role of the villagers has been recorded as well as the effects of the war on the masses. The importance of oral history is felt in most, if not all, African countries, as evidenced by the formation of the Oral Traditions Association of Southern Africa in 1987. Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Zambia and Zimbabwe are members. In Zimbabwe, the major contribution made by the National Archives has been recognized by the Oral Traditions Association of Zimbabwe (formed in 1988): the chairmanship was given to the National Archives' Chief Oral Historian. The Association's Secretariat is based at the National Archives.

Zambia, Tanzania and Malawi have reported similar structures. According to a 1973 report by the Assistant Archivist of Malawi, the National Archives of Malawi contain a public archives collection whose guide is an "up-to-date inventory"; a historical manuscripts collection which comprises the records of non-governmental bodies and of individuals; and a library made up of eight sections (the general collection, a reference section, bibliographies, technical books, government publications, periodicals, a duplicate collection and an audio-visual section). The library has a large section of mission press publications in African languages and its collection of several thousand books and pamphlets in the vernacular languages of Malawi is probably unrivalled in the world. A film library was started in 1968.[2]

The National Archives of Zambia have three main sections: Archives, Records Management, and Library. The Archives deal mainly with records open to the public: it microfilms them, prepares finding aids and processes researchers' requests. The section also collects historical materials from individuals and carries out oral tradition tape recording in villages.[3] In addition to public archives, the National Archives of Tanzania maintain a reference library which includes books on African history and government publications.[4]

USE AND USERS

The National Archives of Zimbabwe cater to a wide cross-section of users who need information for varied reasons. Each collection has particular uses and users, but researchers' queries can often be satisfied by referring to all media.

Public Archives

Once, public archives were used solely by academic researchers, particularly post-graduate researchers. Today, however, the collection is used just as much by undergraduate students and the ordinary man in the street. The University of Zimbabwe, the only one in the country, has had to increase its enrolment since Independence. This has put a strain on its library's facilities and the National Archives, with its collection of Zimbabweana, has been a haven for students from the History Department.

The Research Section has also been flooded with queries from Europe, the United States, the United Kingdom and South Africa on family histories. High Court deceased estate files have been helpful in answering such queries. Local enquirers are requested to come in and to do the research themselves. An index to deceased estates files makes it easy to identify relevant files. Requests for information have also been received from people involved in inheritance disputes.

The colonial regime sometimes removed some families from chieftainship because they supported the liberation struggle and replaced them with "puppet chiefs". After independence, the Zimbabwe government embarked on an exercise of returning the genuine chiefs to power. The Archives have been visited by a number of people seeking to document their right to chieftainship. The Chief Native Commissioner's reports have been found to be useful when dealing with such queries. These reports are also valuable for genealogical research. The Genealogical Society of Utah microfilmed some of these reports in the 1970s and has identified a few more which they would like to microfilm.

The collections have been used by many and have led to the publication of books and journal articles which students the world over have found useful. As testified physician and author the late Dr. Michael Gelfand: "It was almost entirely through the records in our National Archives that I was able to write a medical history of Southern Rhodesia (now Zimbabwe), one of Nyasaland (Malawi) and one of Northern Rhodesia (Zambia) ... I relied almost completely on the archival material although most medical histories do not seem to have emanated from archival research but from those of medical bodies and from doctors themselves."[5]

Historical Manuscripts

This collection, as with public archives, is widely used by academic researchers and the general public. Private correspondence and diaries are an important source of material for genealogical research, and for recording family names, birth dates and other information. The collection includes papers of some of the members of the "pioneer column", the first group of organized white settlers to move into the country from the south in 1890. It is thus not surprising that the National Archives Research Section receives many genealogical enquiries from outside the country, including America, the United Kingdom and South Africa. Interesting to note is that most genealogical queries are from the white community. In the black community, such information is

passed on from generation to generation by word of mouth: what is written is what has been transcribed from oral history interviews. Also to be found in the collection are papers of various clubs, associations and societies (minutes, memoranda and annual reports). This material has been used in preparing histories of various sports and clubs, as well as brochures to mark anniversaries.

Members of churches which deposit their records request certified copies of birth, marriage, baptismal and confirmation certificates. Although the Registrar General's Department keeps copies of marriage and birth certificates, those familiar with the Archives' facilities find it a quicker source.

Printed Publications

The Library has been an integral part of the National Archives of Zimbabwe since its inception in 1935. It was originally intended to serve the National Archives staff and other government departments, but because of a growing demand soon catered to a wide cross-section of users. In 1938, the Library was granted legal deposit status. During the time when the Library was the only legal deposit library, it functioned as a national library, and, when the Federation of Rhodesia and Nyasaland was formed in 1953, it became the national library for the three countries. Due to its collection policy and legal deposit, the Library has undoubtedly the greatest collection of printed material on Zimbabwe. The word "published" is interpreted rather loosely as it includes unpublished material such as theses and dissertations, literature and conference papers.

Works on Africa relating to the history and development of the country are also collected. Thus we have quite extensive holdings on countries with which we have historical links and on subjects such as colonialism, African nationalism, and Southern African ethnography, history, natural history and languages. The Library has over 42 000 items in the general collection of monographs and pamphlets, ranging from valuable works on Africa to ephemera such as programs, political manifestos and broadsheets. The general serial collection contains over 6 000 titles, including newspapers, annual reports and other publications of the central and local governments, and newsletters and journals of societies and parishes.

Government publications form a separate collection which includes comprehensive holdings of material issued by the Zimbabwe government and those of pre-independence governments. Zimbabwe was originally colonised from South Africa (then a British territory) and its legal system was based on that of the Cape Province of South Africa. The appropriate official publications of the United Kingdom and the Cape governments, therefore, comprise an integral part of the collection. During the colonial period (1890 to the early 1960s), the British administration of Southern Rhodesia (now Zimbabwe), Northern Rhodesia (Zambia) and Nyasaland (Malawi) were closely linked, culminating in the formation of the Federation of Rhodesia and Nyasaland in 1953. Because Zimbabwe's National Archives served all three territories from 1946 until the termination of the Federation in 1963, they have extensive holdings of pre-1963 Zambian and Malawian official publications.

Recognized as the foremost reference library on matters relating to the country, the National Archives Library is used by government officials, scholars and members of the general public. Children working on school projects have found the collection very useful. Serious researchers working on their theses and dissertations have found the collection a good starting point before delving into primary sources. Government officials use the collection to study the background of certain policies before amending or abolishing them. Members of the business community and general public come in for information on various statute laws.

The Library's collection includes such reference books as general encyclopedias, dictionaries, directories, yearbooks, "Who's Who", catalogues and bibliographies. Housed in the Search room in order to be readily available to researchers, this collection is used extensively by staff members to answer general questions from the public.

Audio-Visual Material

The photographs and other pictorial materials are used by publishers, scholars, both individuals and organizations, some government departments, the Ministry of Information and documentary filmmakers. In the past, copies of the prints from the collection have been supplied to organizations such as the British Broadcasting Corporation, Zimbabwe Television, the Central Film Laboratory and the Ministry of Education's Audio-Visual Aids Section. Some of the material has been used for the production of documentaries. Transtel International of Germany, for example, visited the National Archives in 1988 to film material for a documentary on Great Zimbabwe. Makers of British documentaries such as 'The End of the Empire' and Basil Davidson's 'Epic on Africa' also consulted the National Archives illustration collections.

The National Archives have received requests from both within and outside the country for authorization to publish photographs. Various companies have requested copies of photographs for exhibitions. Copies of photographs from the collection, such as those of old buildings, can be found in the entrances of hotels and other businesses. Members of the public come to see what the now famous "First Street", "Manica Road", "Stanley Avenue" or any other street and buildings looked like a hundred years ago. Copies of photographs of relatives are also often requested.

Oral History

In Zimbabwe as elsewhere, government records tend to give the "official version" of events. In order to get a fuller picture, personal versions and impressions are needed. Official records also contain only what the officials chose to record or preserve. The oral historian seeks to elicit that missing information which is vital for serious research. Oral history can also provide the researchers with a record of contemporary history, whereas the data in official files can, by law, be made accessible only after 25 years. The oral history work at the National Archives has done much to document the alternative voice of the times.

University students and overseas researchers have found oral history interviews an invaluable source for their research. These interviews are sometimes the only source of information on a particular topic, such as some aspects of the liberation struggle, about which not much has been written, and whose official documents are still closed to the public. Since the early 1980s, the oral history programs have focused on the liberation war, especially as experienced by the peasants. Many researchers, however, are not aware of the oral history holdings. Bringing these resources to the notice of more users of the National Archives is desirable, and local academics should be encouraged to exploit the full potential of the material. Schools have used oral history for educational purposes. The Zimbabwe Broadcasting Corporation-Radio Four, an educational radio station, has asked the Oral History Section to assist in preparing educational and entertaining programs by providing oral tradition interviews.

Altogether, the work of the National Archives in this field provides the basis for a wide range and increasing number of users -- local and foreign academics, community historians, authors, documentary researchers, and political, economic, biographical and social researchers.

USER ACCESS TO INFORMATION

Finding Aids

Except for photographs, the public has access to all these collections only through catalogues and inventories. It is necessary, therefore, that the material be adequately described in guides, indexes and inventories.

Public Archives and Historical Manuscripts

Public archives and historical manuscripts are described in inventories, detailed listings of the records which supplement and complement the catalogue. The administrative histories (for public archives) and biographical notes (for historical manuscripts) which form part of the inventory sheets are designed to guide the researcher through the collection. The administrative history will provide the researcher with such information as why a series stops short at a particular date, which Department took over, various name changes of Departments, etc. An administrative history, which describes changes in the functions of the creating department, helps the researcher to understand the collection.

Publications and Audio-Visual Material

An author-title catalogue includes entries for all monographs, serials and microforms, with separate catalogues for government publications, sound recordings and posters. The main subject catalogue, however, contains entries from all these collections. Analytical entries are made for several hundred periodical articles every year to highlight significant information. A separate classified map catalogue is maintained with an index to places, cartographers and other persons or bodies associated with each map. There is a catalogue of films with detailed indexes.

The photographic collection is not catalogued. Access is provided by a classification scheme and through an index of proper names, places and subjects. A comprehensive index of biographical information which appears in local periodicals is worthy of mention. The major newspaper has been indexed from its inception, as have the early journals, and all the important current periodicals are regularly scanned for suitable additions.

Oral History

Oral history interviews are accessed through an index of proper names, places and subjects.

Bibliographies and Guides

The collections of the National Archives are well described. Every effort is taken to make it easy for researchers to identify relevant material. However, this would be to no avail if we did not make potential users aware of our materials. The National Archives of Zimbabwe have guides to its public archives (*Guide to the Public Archives of Rhodesia*, Vol. 1, 1890-1923) and Historical

Manuscripts (*Guide to the Historical Manuscripts in the National Archives of Rhodesia*). These two valuable guides are now being updated.

Developing countries are aware of the importance of compiling guides to their collections, but the problems of shortage of trained personnel makes their preparation slow, if not almost impossible. The Guide Project of the East and Southern Africa Branch of the International Council on Archives (ESARBICA: Botswana, Malawi, Uganda, Sudan, Ethiopia, Somalia, Mozambique, Tanzania, Swaziland, Lesotho, Zambia and Zimbabwe) aims at producing guides to the sources of African history from archival materials located within Africa. A guide to the photographic collection has been compiled and plans are under way to publish, first, a Zimbabwe filmography and later, a discography for the sound collections. These publications will be annotated and indexed.

The Library is responsible for the bibliographic control of Zimbabwean publications. It compiles the Zimbabwe national bibliography annually. However, the situation regarding the country's printed resources is far from satisfactory as there is no union catalogue. Professional bodies which discussed the issue concluded that there is no institution now able to compile a national union catalogue because of a lack of funds and personnel. Major Zimbabwean libraries, in common with other Southern African libraries, contribute entries to the *South Africa Joint Catalogue of Monographs* and to *Periodicals in Southern African Libraries* on which Zimbabwe's entire interlibrary loan system is based. Lack of funds and staff shortages are the reasons given by most African countries for inadequate bibliographic control. This was reiterated at the Africa Standing Conference on Bibliographic Control held in Madagascar in July 1988. All countries are affected. For Zimbabwe, the establishment of the National Library and Documentation Services (NLDS), now being planned, may improve the situation. Seminars and workshops held on library computerization have pointed out the importance of compatibility in order to share resources and, ultimately, to compile the union catalogue. Clearly, the lack of national bibliographic tools limits access to national collections of recorded information.

Publicizing the National Archives Facility

The National Archives take every opportunity to publicize their facilities. Such opportunities have come in the form of television appearances, press releases, talks at public gatherings such as school prize giving days, luncheons, various association meetings, exhibitions marking important events, guided tours of the National Archives, and open days. At school prize giving days, the Director makes it a point to outline the way teachers could use the material. Speaking at one of the monthly luncheons of the Zimbabwe National Chamber of Commerce, the Director urged decision-makers, in both the private and public sectors, to use the archival collections to study economic trends before embarking on elaborate strategies.

Pupils and members of the public are taken on guided tours of the National Archives. There are permanent exhibitions on the constitutional history of Zimbabwe and on the history of the country's capital city, Harare, in the National Archives' Beit Trust Gallery. The National Archives readily lend other institutions and organizations material or expertise for educational exhibitions.

In 1984, the National Archives, in conjunction with the Zimbabwe National Army, mounted an exhibition on the Zimbabwe Liberation Struggle. On display were weapons used by the freedom fighters, uniforms, and other aspects of the struggle. Material for this pictorial exhibition came from library collections, the photographic collection, and public and private archives. Members of

the public were also able to listen to some of the *Voice of Zimbabwe* tapes which included addresses by the freedom fighters at rallies, *chimurenga* (liberation war) songs, and addresses to the freedom fighters by their commanders.

In 1985, an Open Day to mark the National Archives' Fiftieth Anniversary was very successful, but due to costs, staff constraints and security reasons, Open Days cannot be held frequently.

However, the National Archives need to do more to publicize their facilities. Several of the National Archives publications would serve well as publicity tools if they were widely distributed. The *Zimbabwe Epic* (a copy of which is in every school in Zimbabwe) is a pictorial history from the earliest times to Independence. It can illustrate what the photographic collection has to offer. Brochures about the National Archives' main functions are given to visitors and could be used to inform others if they were passed on rather than discarded. Even the guides to the collections have a limited distribution. A user survey is needed in order to plan publicity carefully. No user surveys have been carried out by the National Archives. The visitor registers which carry information such as "Subject of Study" do not reflect the needs of potential users.

Catering to Information Needs of Rural People and the Illiterate

Most of the users cited above are urban. Much has been written about the neglect of rural people regarding essential facilities such as clinics, water, sanitation, and schools. Information is another facility denied to rural people. In Zimbabwe this could be a thing of the past if the National Library and Documentation Service (NLDS), inaugurated in 1981, succeeds in its endeavours. Currently, the NLDS is planning a survey of the information needs in rural areas in order to introduce mobile libraries and to set up "culture houses". Culture houses, the first and only one of which was opened in 1986 at Murehwa Growth Point, are regarded as a landmark in the provision of information to rural people. A culture house has been defined as "a rural focal point for the collection, preservation and dissemination of knowledge and information for the promotion of educational, social, political, economic and cultural development of rural areas in particular, and the Zimbabwe nation in general".[6] They are designed to have a library, museum, oral archive, all-purpose hall, theatre, arts and crafts and printing workshops. From the culture house library, books will be distributed by mobile vans to schools, clinics and other government institutions. Audio-visual materials will complement and supplement the printed matter. The local people will be interviewed on their culture and traditions, as well as on other aspects of the development of the area; these interviews will form part of the oral archives collection.

The printing facilities will enable the printing of local newspapers or newsletters reporting on local activities and events. Since 1987, four rural newspapers have been produced and these have proved very popular with the rural communities concerned. Once culture houses have been established, the National Archives could set up exhibitions depicting various aspects of those communities. Enquiries from the rural people to the National Archives could also be channelled through the culture houses. In this way, the National Archives will be able to contribute to meeting the information needs of rural people.

THE NATIONAL ARCHIVES OF ZIMBABWE ACT (1986)

The work of the National Archives, as custodian of the nation's documentation heritage, is made much easier by government legislation. The National Archives of Zimbabwe Act (No. 8 of 1986) gives the Director of the National Archives powers which ensure the acquisition and preservation of records. Sections 5 and 6 empower the Director to declare any public records to be of enduring or historical value, and serve notice in writing to the Secretary of any ministry in whose custody such records are. The Director may examine the records of any ministry; give advice or instruction concerning filing, maintenance and preservation; when necessary, transfer records to the National Archives; and give instructions with regard to and instruct ministries about the retention or destruction of records. The director has powers to do the same with records of local authorities or statutory bodies. The Act prohibits the removal of public records or public archives from Zimbabwe and ensures the protection and preservation of historical records by forbidding the destruction of such records without the consent of the Minister of Home Affairs.

The National Archives offer, in conjunction with the Harare Polytechnical College, a course in Records Management to government records officers, local authorities, and those in charge of records in parastatal agencies.

Seminars and workshops on good records management practices are given to government registry supervisors and clerks. The National Archives are aware of the fact that, in order for these seminars to be of any value, government decision-makers need to be educated about how useful the records can be for decision-making. In 1985, Permanent Secretaries of Ministries were invited to visit the Archives. During these tours, the Director discussed how the National Archives could assist them and urged closer cooperation between the Archives and the creators and users of records.

CONCLUSION

The *Directory of Libraries in Zimbabwe* (1987) lists 243 libraries and research centres. These include public libraries, government departmental libraries, college and school libraries, and special libraries, including staff libraries of some business concerns. Except for specialized libraries, such as the Audio-Visual Services Library, the collections generally comprise printed material and some microforms. Users range from 30 to 7 000. The National Archives welcome about 5 000 users a year. Researchers are referred to other libraries by National Archives staff if their information needs cannot be met by the National Archives collections. A Union Catalogue would help, as it is difficult to know whether users will find what they are looking for in ministry libraries. Most of these libraries do not have guides to their collections and do not contribute to the South African joint catalogue of *Monographs and Periodicals in Southern African Libraries*. However, the University of Zimbabwe is compiling a list of periodicals in Zimbabwean libraries which could improve resource-sharing. Discussions at meetings of libraries, such as meetings of the Zimbabwe Library Association, show that there is a user awareness amongst libraries: they constantly ask themselves whether they are adequately serving their users and what can be done to improve the service.

I believe that all information repositories in Africa are utilized to the fullest. Even specialized institutions are under pressure to open their doors to all categories of users. Nevertheless, there is room for improving information handling and retrieval methods. More information must also be made available to rural communities which tend to be left well behind

in most development programs. Large numbers of potential users of information are still not aware of the existence of this information. Information as a development tool does not get a very high profile in planning strategies. More needs to be done to make decision-makers conscious of this deficiency.

NOTES

1. *Report of the Director of National Archives of Zimbabwe*, 1985, p. 3.

2. K.M. Mtapiko, "The National Archives of Malawi", *Ecarbica Journal*, 1, 2 (Sept. 1973): 88.

3. P.M. Mukula, "Report from Zambia: National Archives of Zambia", *Ecarbica Journal*, 1, 1 (April 1973): 26.

4. M.H. Nassor, "The National Archives of Tanzania", *Ecarbica Journal*, 1, 1 (April 1973): 32.

5. M. Gelfand, "Archives and Medical History", *Ecarbica Journal*, 6 (Oct. 1983): 47.

6. S.M. Made and G.C. Motsi, "Alternative Ways of Providing Rural Information -- Culture Houses: The Zimbabwean Experience", *Zimbabwe Librarian*, 18, 2 (Dec. 1986): 47.

NATIONAL ARCHIVES OF INDIA

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National Archives of India

ABSTRACT
The National Archives of India possess a rich collection of historical documents that attracts researchers the world over. The Archives both conserve and exploit their holdings. In the conservation field, they have developed low-cost, effective techniques for preserving and restoring documents. Outreach activities include tropical exhibits as well as collaboration with state archives. The National Archives also play an active role in records management practices and programs of the central government. But despite a 1972 archival policy resolution, much remains to be done in streamlining records management practices in government departments. The implementation of this policy should better define the Archives' responsibilities vis-à-vis other record-creating agencies.

THE NATIONAL ARCHIVES OF INDIA

The National Archives of India, known until 1947 as the Imperial Records Department, were established in 1891 at Calcutta to house the non-current records of the Government of India, as a permanent solution to the problem of storing and preserving the ever-increasing bulk of records. Since then, both the holdings and scope of activities have steadily expanded. Today, the archives are perhaps one of the biggest, best-equipped records repository in Asia.

The Archives have in their custody almost all the records of the current government of India and its predecessors for the last two hundred years. The regular series of records date from 1748 and belong to such ministries or departments as Home, Foreign, Finance, Revenue and Agriculture, Industries, Railways, Military, Legislative, Education, Health, Survey of India, Information and Broadcasting. Since independence, the Archives have acquired, from foreign repositories, microfilm copies of records in order to fill the gap in the existing series and documents of Indian interest, thus supplementing the historical archives. In addition, the National Archives have acquired microfilms of papers relating to Secretaries of States, Governors-General, Governors, Viceroys and other archives of Indian interest from various repositories in the U.K., U.S.A., U.S.S.R., France, Denmark, Norway, Italy, etc. They also acquire, either by gift or purchase, historical manuscripts and private papers of important personalities connected with modern Indian history, including those of Mahatma Gandhi, Maulana Abdul Kalam Azad, Netaji Subhas Chandra Bose, V. Krishna Aiyar, Rajendra Prasad, M.R. Jayakar, General K.M. Cariappa, Sri Sita Ram, and many others. The Archives also possess a good number of oriental records in Persian of the Mughal period as well as records dating back to the 6th century AD on birch bark and clay-coated proto-paper. The holdings occupy 25 000 linear metres of shelf space.

The rich collection provides information on a wide variety of subjects pertaining to modern Indian history. This abundance of material lures scholars and researchers from India and abroad. The Archives Department uses the latest scientific techniques in preserving these records, in order to serve the needs of government and researchers and safeguard this cherished documentary heritage of the country's past. It is no exaggeration to say that no documented study of any aspect of Indian life during the British period can be regarded as complete, unless it has made use of this valuable storehouse of information. These records, therefore, form an indispensable and almost inexhaustible source of information for the student of modern Indian history.

The National Archives of India also create records and maintain them. They administer three Records Centres at Jaipur in Western India, Bhopal in central India, and Pondicherry in the south, which manage non-current records of central government offices in the areas. Plans are under way to set up a Records Centre for the eastern zone of India, as well as in Bhubneshwar. The Director of Archives coordinates and guides all operations connected with the administration and preservation of public records. He ensures that records of permanent value are not destroyed but are transferred to the National Archives of India at an appropriate time, as dictated by its well-articulated acquisition policy.

Government holdings have been organized according to their origin, while the principle of convenience has been followed in the arrangement of private papers and procured microfilms, with due importance and emphasis given to the person concerned, the historical events, and their activities. A chronological sequence is also considered in the arrangement of procured archives.

CONSERVATION ACTIVITIES

Generally speaking, an archival program covers conservation and exploitation of archival holdings as well as acquisition. The National Archives of India have always been aware of the problems of conserving documentary assets with the limited resources at their disposal. In all operations connected with conservation, the Conservation Research Laboratory of the Department has played a key role. Its outstanding achievement has been the development of an inexpensive, special process of manual lamination without heat or pressure, known as the hand lamination process or solvent lamination, which uses acetone as a solvent with cellulose acetate foil and tissue paper. It is simple and easy to perform and the documents are as legible as machine laminated ones, treated using cellulose acetate foil and tissue under heat and pressure. The process is now used in a number of institutions abroad and has been given recognition as a restoration technique all over the world.

Further investigations of problems faced by archives in tropical and sub-tropical climates are being carried out, such as finding substitutes for imported materials used to restrengthen documents -- handmade paper, chiffon and tissue paper -- as well as binding materials of durable quality; examining the available specifications of writing paper and ink in order to recommend the best stationery materials for the creation of lasting records; and developing a suitable less expensive technique of restoration by manufacturing high-grade paper locally. Keeping in mind the increasing cost of cellulose acetate foil, the Department formulated a thin paste of sodium salt of carboxy methyl-cellulose, which does not require fungicide additions and which, unlike thin starch paste, keeps the legibility of the writing intact when repaired with tissue. It has also developed a technique for deacidifying water washable ink documents by using diluted ammonia fumes (1:10). Other achievements include the fibre analysis of clay-coated proto-paper of the 6th century AD, and methods of restoration, as well as the discovery of the effectiveness of sodium benzoate as a leather

preservative. It has developed a technique for imparting flexibility to palm leaves which become dry and brittle over the years. It renders information on various aspects of conservation to different organizations and institutions in India and abroad interested in maintaining their records, manuscripts and books.

In the Indian context, microfilming is used not to substitute original records, but for security reasons: originals are preserved simultaneously because of their evidential value. The reprography unit provides microfilm copies of records in response to demands from research scholars and institutions in India and abroad. Microfilm cameras, Xerox and photostating machines and other equipment are used. The unit also provides technical information and advice on reprographic services to different institutions.

RECORDS MANAGEMENT

The involvement of the Archives in records management is basically to identify historical records and those of intrinsic value which are subsequently transferred to the archives. Our Archives therefore play an active role in the records management practices and programs of the central government.

During the 18th and 19th centuries, administrators in India had to face problems of disorder and lack of space due to unrestricted accumulation of documents. Efforts were made to rationalize the weeding out process by establishing clearly identifiable categories. The adoption of a classified filing system was a step forward. Another major development in the field of records management was the emergence of the Indian Historical Records Commission in 1919 to advise the government on the treatment of archives, facilities for research, publications of documents, and other subjects. In later years, the Commission increasingly applied its findings, establishing general principles in the field of records management, and recommended appropriate machinery for automatic appraisal programs.

Today, record management problems have assumed enormous dimensions and have become more complicated as a result of the variety of physical forms of modern records -- films, photographs, video- and audio-tapes, and many more. Archivists today have to face more challenges regarding their upkeep, maintenance and exploitation. In 1960, the Committee on Archival Legislation also stressed the need for discipline in the management of records in order to conserve the information recorded therein.

The National Archives of India depend on the departments that own the documents for the efficient administration of non-current records. The departments must keep and review their records regularly in order to transfer records selected for permanent preservation to the National Archives systematically and regularly. During this process, the National Archives are much concerned: they must think about the records from their conceptual stage so that the recording, classification, appraisal and retrieval of the information they contain can be facilitated.

In 1962, the National Archives undertook a pilot records management project, aimed at formulating appraisal standards and relieving government agencies of the burden of ephemeral records. In 1972, the government of India adopted an archival policy resolution for streamlining records management practices in central government departments. It is through the implementation of this resolution that the National Archives are expected to play a key role in planning and executing various records management programs.

Since 1973, the Archives have submitted annual reports on the implementation of the archival policy resolution, with particular reference to the management of public records and the actual working of the records management system. The resolution has clearly defined the responsibilities of ministries, departments and offices of the union government for the proper custody, care and management of records in their possession. Trained personnel must periodically appraise and eliminate ephemeral records and transfer records of permanent value to the National Archives in an orderly, systematic way. Constraints of space and fiscal resources demand that a reasonable ratio be maintained between the creation and destruction of records.

The Records Management Division of the National Archives plays an active role in this respect: by appraising non-current records of central government departments, they save shelving space and storage costs, estimated at Rs 1.50 per file per year. It also helps in drawing up retention schedules for records of substantive functions. Common office services are guided by the central secretariat manual of office procedures. Its team of officers are sent to central government departments to make on-the-spot studies and to engage in discussions with the officers concerned. These schedules are very helpful in classifying files properly at the time they are recorded, appraising them after 25 years, and in weeding out those that are no longer required. Schedules are also revised every five years to cover the changing and expanding activities of the department. The Division also acts as consultant and guides various departments and institutions in records management practices such as recording, reviewing, indexing, printing classified and unclassified records, maintaining and preserving records, etc. The inspection of ministerial and departmental record rooms, initiated in 1985, still continues.

Limits and conditions have also been prescribed in the archival policy resolution governing public access to records retired to the National Archives. The Research and Reference Section looks after, and provides access to, public records which are more than 30 years old, to every citizen of India over 21 years old.

COMPUTERIZATION AND TRAINING

The department has also taken vigorous steps to introduce computerization in the department and to develop automated information storage and retrieval systems. A computerized information system to enable scholars to locate the desired information has already been envisaged and one Keltron PC/AT computer has been installed in the department. To develop a complete operation system, a phase-wide implementation has been suggested. Some officers have already received preliminary training in computer systems. We hope that this will strenghten readers' services and will also increase the productivity of the National Archives staff. It will also serve as a national and international information exchange network.

To improve records management practices in government departments holding current and semi-current records, the School of Archival Studies has organized a number of training and reorientation programs since 1943, such as one-year diploma courses in archival studies and various short-term courses in records management, archives administration, reprography, conservation of books, manuscripts and archives, servicing and reporting of records, as well as several workshops, seminars and symposia at national and international levels. It also offers awards and scholarships to private Indian students and Indian state-sponsored trainees in the diploma course. The school has four fellowship schemes for research and development in the field of Archives. It is aided by a Board of Studies which advises and examines the course contents of the curriculum, taking into

account the latest archival trends and training needs of archival institutions in India and abroad. Students from Afro-Asian countries have benefitted from all these courses.

The department also maintains a reference library containing a rich collection of nearly 200 000 books, including rare ones. It also subscribes to a number of journals. The servicing of records necessitates the preparation of suitable retrieval tools and publications. The department had prepared indexes, descriptive lists, summary inventories and guides, and calendars of records in Persian (correspondence). For the 21-volume *Fort William India House Correspondence* series, the department has published *in extenso* the letters to and from the Court of Directors of East India Company. Since 1948, it has published a bi-annual journal, *The Indian Archives*, to make the users aware of archival activities in India and abroad. It regularly publishes the *Bulletin of Research Theses and Dissertations in the Indian Universities* to help scholars decide areas of future research. The Indian Historical Records Commission session helps to promote historical scholarships, to discuss problems, and to find solutions in the use and the servicing of records.

OUTREACH ACTIVITIES

In order to create archival consciousness in the country and among users of archives, the Department organizes topical exhibitions of original documents and photographs. Open-house programs, held as part of Archives Week celebrations every year in November, provide an opportunity for a number of visitors to see the activities of the department. The Department also proposes to create a mobile exhibition unit which would stage exhibitions on various topics in different parts of the country, thus bringing the archives much closer to the people.

The States of India also have archives to house the non-current records of current state governments and their predecessors. They do not work under the control of the National Archives of India, but manage and conserve state records under the control of their government. The Indian Historical Records Commission had coordinated the archival activities at central and local levels in a limited way and advised records officers on matters relating to the access and utilization of records, including those in the possession of former state governments. In 1941, the Commission was reorganized: in addition to provincial and state government representatives, nominees from universities and learned societies were included, thus widening the scope of its activities.

Another body, formed in 1953, the National Committee of Archivists, groups representatives of all State Union Territories Archives, eminent professional archivists, and heads of regional archives offices. It provides a professional forum for discussing archival problems and disseminating solutions and new techniques for coordinating activities of common interest among archival offices in the country. It considers and recommends measures for improving archival institutions in the region and for co-operating in solving problems at a professional level.

The National Archives of India also play an active and useful role by providing financial assistance through programs designated to promote archival activities and to maintain and preserve public records. Under these schemes, they provide 75 per cent of the cost of preserving, listing, cataloguing and publishing manuscripts to voluntary organizations, educational institutions, libraries, museums, universities, etc. It also provides technical know-how.

In collaboration with state governments, the National Registry surveys important archives in private custody and prepares a national register of such records. So far, 15 volumes of national

registers have been published. The central government also provides grants to state governments participating in the scheme.

CONCLUSION

If the work done by the National Archives of India were analyzed, it would reveal that much has been achieved by the department. But there still is a need for comprehensive legislation on public records, because executive orders are not effective in the absence of statutory obligations. This legislation should clearly define the responsibilities of the Director of Archives vis-à-vis other record creating agencies. Good progress has been made in this regard.

The department has ambitious plans for the future in different fields of Archival Science. It is studying the feasibility of introducing automated information storage and retrieval systems for records; the expansion of reference and research services; ways of accessing archives from ministries and departments; the establishment of record centres for ministries and departments, and of a feeder unit for conservation; the microfilming of records; storage and maintenance services; and many more. With the passing of legislation, it is expected to play an active role in the records management operations of central government departments. Collaboration has helped bring about improvements in the quality of archival work done in various departments and has helped standardize their archival policies and procedures. We hope to achieve more with the enactment of archival legislation for public records.

AN INNOVATIVE, USER FRIENDLY COMPUTERIZED ARCHIVAL SYSTEM COMBINING TEXT AND IMAGES: A CHILEAN EXPERIENCE

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ABSTRACT
This paper describes the design and implementation of the Archives and Records Project of the Catholic University of Chile. The project resulted in the design of a well-planned manual system, together with its procedures manuals, and the creation of automated prototypes with HyperCard -- a new software tool. The final product has been the implementation of a full cycle of records and archives management, supported by an innovative automated system developed on HyperCard, and applied as a pilot project to one area of the University, i.e., the Vice-Rectorate for Economic and Administrative Affairs.

GENERAL FRAMEWORK

The Situation of Archives in Chile

Currently, there is no formal professional training in archives and records management in the country: librarians and other professionals have had to develop their own skills. Isolated courses are offered by secretarial training institutes and a one-year course is included in the library science curriculum of the *Instituto Professional de Santiago*. A few individuals, particularly those related to the National Archives, have been trained in Spain, but the archivists have been mainly historians rather than information specialists. Also, there are no national standards for Archives.[1]

The National Archives[2] were created in 1927 as a result of the merging of the General Government Archives (created in 1887) and the National Historic Archives (created in 1925). They were established by law in 1929. The Archives, legally, are the depository of a large part of the documentation accumulated prior to national independence, of the administrative and judiciary documents created since 1818, and of current administrative and legal archives. The collection of documents consists of records of the State Secretaries (Ministers), Governances, Intendancies, Municipal acts, notarial protocols, records of properties, legal processes, expedient and jurisprudential documents. The National Archives also receive donations and acquire collections of historical value, but do not dispose of records. The transfer schedule for these archives is as

follows: State secretaries, five years; Intendancies and Governances, 60 years; notarial protocols, records of property registers, legal processes and books of notes for legal sentences, 80 years.

The National Archives do not collect audiovisual material, but have a collection of maps and drawings related to public or private activities of some important individuals. The Archives have a well-equipped restoration service. They offer various services to users and are highly consulted. The Archives are not permitted to alter or to tamper with the documents. These documents are kept in the same condition as when they were received. The Curator, however, can visit document-producing centres, and establish procedures for the transfer of documents to the Archives.

An analysis of the standard practices in the country showed that the National Archives are in the early stages of automation, following national network standards (MARC[3], AACR-II, LC[4]), and are inputting on-line into the national network (RENIB[5]) their inventory, box by box, through the use of the NOTIS[20] system. Their experience is geared towards paper documents only and, therefore, there is no experience concerning multimedia documents. The present problems of the National Archives are: the lack of resources to modify present structures, reflecting administrative changes which have taken place in the country (i.e. regionalization, in which the country was divided into 13 regions); replacing originals with duplicates, microfilms, or other to avoid the misuse of originals; lack of trained personnel and insufficient staff.

In the private sector, particularly in business and financial groups, there are some well-organized records centres in terms of storage, retention policies and disposition schedules, but very few have developed an information system with retrieval and storage capabilities. Because of legal requirements, institutions such as the private social security companies have, with different degrees of success, developed systems directed to the identification, storage and retrieval of information.

The Catholic University of Chile

The University has four campuses in Santiago, five regional branches, a hospital, a TV channel serving 44 stations, and five affiliated corporations. There are 16 100 students: 15 100 undergraduates and 1 000 graduates. The University offers 41 undergraduate, 21 masters, 8 doctoral, and 11 diploma programs. The academic staff is made up of 1 385 professors. A total of 23 periodicals and an average of 20 books are published each year. Twenty percent of the University's budget is derived from government-assigned funds (see Annex 1).

The Problem

The nonexistence of a central Records and Archives Program at the university resulted in the following problems,[6] some of which have already been solved:

- many multimedia records, such as paper (bound, loose-leaf), magnetic tapes, sound recordings, graphic material, audio-visual material, video tapes, film reels, images (photographs, slides), etc., are continuously being produced and were being poorly stored;
- relevant records were not kept and irrelevant materials were not discarded;
- obtaining information from these records was very costly and inefficient;
- there was no strict control of the valuable artifacts that the university possesses;

- there was a lack of know-how at the institution, either manual or automated, on the management of archival and records information;

- there was an accumulated backlog of historical papers covering a period of 100 years that had never been organized or described, and were spread over several different offices; and

- the Archives Office, which was a one-person operation, was an unorganized storehouse which only kept back-up records for legal purposes.

In May 1987, the Vice-Rector for Academic Affairs appointed Ms. Soledad Ferreiro, former Director of Libraries, to outline a plan on how the university could organize its archives and records.

The Initial Proposal

As the university did not have a regular program on the subject, it was a unique opportunity to propose a new program that would integrate widely dispersed documents into a central system as a means of improving the management of information from archives and records. It was proposed that the system should be a complement, and a better alternative, to files held in individual offices. This would be accomplished by a well-designed, less costly operation. The program should have a social responsibility as the depository of the institution's history and it would communicate the university's ideas and accomplishments.

The initial proposal[7] presented to the university authorities introduced the subject of archives and records management, described the current situation at the university, identified the offices that should participate in an experiment, presented a general solution including the need to face the problem with an interdisciplinary team (librarians, systems and computer engineers), and proposed a pilot project, with related costs. The proposal was approved, although its budget was cut by half. This did not mean changing the proposition, but implementing it at a slower pace. Ms. Ferreiro was assigned to be in charge of the project, and the precarious infrastructure of the Archives Office became her responsibility.

The conceptual framework approved by the university[8] includes the following:

Mission and Objectives

The Archives are a depository of the university's collective memory, thus supporting the dissemination of part of its intellectual product. To fulfill its mission, the university's archives system must collect, preserve and provide access to multimedia records and artifacts of academic, historical, legal and administrative value, which are part of the activities or contractual obligations of the university. To do so, it must preserve records of permanent value (archives), and efficiently manage records which fulfill temporary legal or administrative back-up functions (records management program).

Furthermore, the Archives have the mission of promoting the efficient management of individual files held at the different offices of the university. The Archives fulfill their mission by accomplishing the following objectives:

- to formulate a collection development policy in order to obtain and to appraise documents related to the university;

- to provide a method of storing records that guarantees their integrity, safety, preservation and access at a minimum cost. These records must be preserved impartially, faithfully and with respect to privacy of information;

- to provide the community with an information service based on archival holdings, supported by adequate technological tools, which will permit the efficient retrieval of documents and, in certain qualified cases, data or repackaged information; and

- to offer training programs to university offices on the efficient management of their own files.

Benefits

The Records and Archives Program was evaluated in order to demonstrate its financial benefits. Social benefits were not evaluated.

The Archives system will increase the value of the information contained in the documentation managed by the university and will rationalize the present resources allocated to their handling. This added value will be accomplished by means of:

- transforming part of the documents into historical patrimony, thus creating the university's collective memory.

- enabling better accessibility to all documents by: easier and faster document retrieval and, in special cases, the retrieval of information itself; and permitting all university offices, and not only the originators, to have access to the documents.

- providing better management for the individual archives within the various university offices.

Timely access to the records will enhance productivity of the university departments and will result in greater impact of the university's program on the country, through better communication, and projection of its ideas, accomplishments, creativity and products.

Rationalization of resources will be achieved by:

- saving resource space by storing temporary administrative records in less costly locations thus freeing office space.

- centralizing records management under a common framework thus saving time in administrative procedures.

Furthermore, the Archives will contribute to the improvement, design and use of records, and will permit the development of archival management techniques which will be transferable to other institutions. The beneficiaries of the archives/records system will be the entire staff, the faculty, the student body and the general public. The scope of the program includes all multimedia records handled by the university.

DESIGN OF THE SYSTEM

Preliminary Steps

The first phase of the project included working documents belonging to the central administration of the university such as: Grand Chancellor, Rector, Pro Rector, Secretary General, Vice-Rectorate for Economic and Administrative Affairs, Vice-Rectorate for Academic Affairs, and the Faculties. Due to the urgent need for management of legal document back-up operations, the pilot project selected the Vice-Rectorate of Economics and Administrative Affairs as the target for 1988.

The pilot project was undertaken by an interdisciplinary group that grasped the problem from the beginning, analyzed the literature in depth, considered most of the basic principles, and proposed a new way of handling a multimedia-record and archives-based information system. The literature reviewed[9] did not offer guidelines for the design of such a system. Nor were there accepted practices and procedures such as those available for library information systems. Our team had to expend considerable creative effort in translating general available guidelines into an operational system.

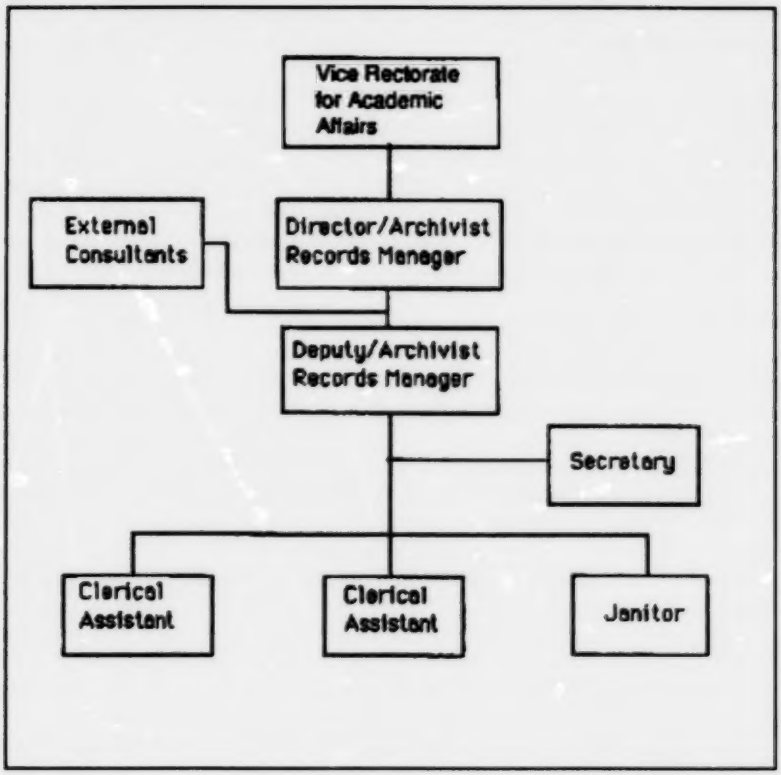
The working team defined the basic concepts of the system and acquired experience through the implementation of the pilot project. This know-how resulted in a basic document which was approved by the university. During the practical phase of the pilot project, a procedures manual[10] was developed together with different forms and sets of instructions. Engineering students, hired for short periods, interviewed, applied the survey, structured information and created the inventory of each office. They also applied appraisal techniques and created the Archives inventory by determining which records were to be transferred and which were to be kept permanently or discarded according to their retention schedule. The pilot project dealt mainly with paper-based records.

Creating the inventories[11] was an intensive task which required many interviews, until department heads agreed with the description and associated information of each record or record series. At the same time, forms were finalized. The inventories, together with a list of their record series sorted by codes, were prepared using the Macintosh Excel software.

Organizational Structure, Staff, Physical Facilities

In March 1988, the staff consisted of Ms. Marialyse Délano, a qualified librarian and former Head of the university's Technical Services of the Library System, a clerical assistant, a clerk, a secretary, a coordinator, and a part-time janitor. Dr. Patricio del Sol, Ph.D. (Engineering and Economic Systems), Stanford University and Professor of the Faculty of Engineering, was hired as a consultant for the design and implementation stage of the pilot project. He was assisted by part-time students in their last year of Engineering. The design and automation of the system was handled by an external consultancy through the Informatics Centre of the university. Mr. Cristián García-Huidobro, a computer engineer, was assigned as project coordinator. A graphics designer was also hired for a short period for the HyperCard project.

During 1988 a loose administrative structure provided the project with enough flexibility to carry out a variety of tasks.



The Archives system as a whole does not have the facility to house their different functions. The general administration, historical backlog of documents and computer equipment are housed in the main building of the university. The permanent and non-permanent records are housed in a basement near the central building. Audiovisual materials are housed in the new Extension Centre which was inaugurated in June 1989.

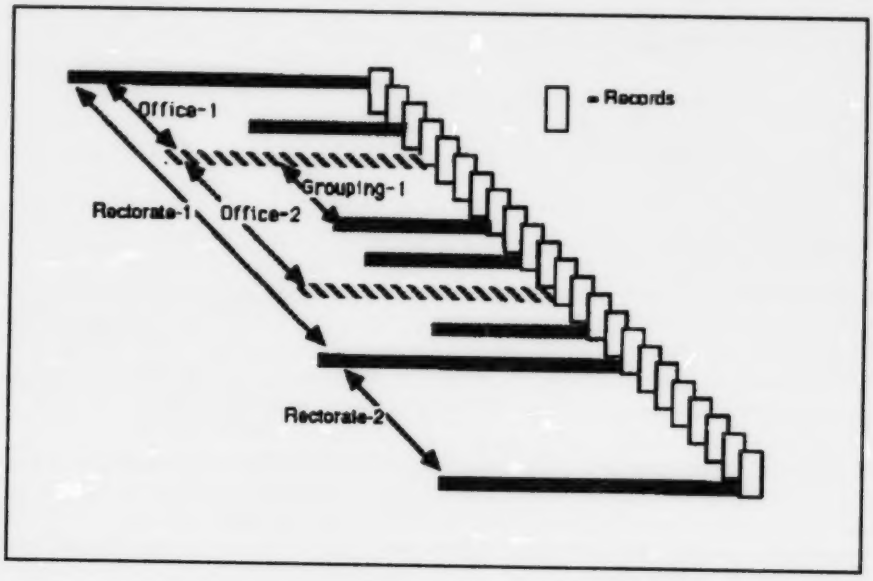
Technical Design Characteristics

The establishment of a collection development methodology:[12] The growth and development planned for the archives and records system consisted of obtaining records and record series from the university offices by transfering inventoried current records and historical records. The transfer of inventoried current records is directed to the management of records and record series currently produced by the different offices. By a survey, an inventory is produced for each office and ratified by office heads (Annex 2: Archives System Flowchart). From this office inventory, records are selected for the Archives inventory with a retention program. From this retention program a schedule is prepared for the periodic reevaluation or elimination of documents. The transfer of donated historical records is done in a similar manner, without a survey and with a conscientious revision of the records and record series themselves, before they are transferred to the Archives, where they are appraised.

Records are classified either as permanent or non-permanent records and a retention schedule is established. This evaluation is done by applying an appraisal model[13] developed to determine the historical, legal, fiscal and administrative value of records and to assign each record with a permanent or temporary retention status. The appraisal model was based principally on the paper by Boles and Young.[14]

Three general criteria are considered: the value of the information; the cost of retention; and the political implications of the retention decisions. They are applied to every record or record series after they have been inventoried. This establishes the Archives Inventory. Three categories are assigned: permanent, permanent to be appraised after 10 years, and temporary. The latter group must be sent to the Archives if they are a legal back-up. The Archives have no obligation to deal with other temporary documents, unless the office generating them pays for the service.

The arrangement and description of records and record series:[15] The Archives are first divided into the nine rectorates of the university's first 100 years (Annex 3a). Within a particular rectorate, the Archives are arranged according to the organizational chart of that period (Annex 3b). Records or records series are then grouped within the organizational unit to which they belong (Annex 3c). They are grouped according to criteria which favour their management and retrieval, the internal organization of the office and the origin or destination of the documents and series. The fourth level of arrangement is the record series themselves (Annex 3d). The arrangement then considers sub-series, and next, individual items or records. The following figure describes generally how records are arranged.



Each individual record or record series has an alphanumeric code which indicates: the rectorate to which it belongs; its origin or transfer office, including its hierarchical position within the rectorate; and the group and series number or individual identification. The basic description

is the record series or record to which additional information about the university, the provenance, images, etc., can be associated.

Series are constructed according to diverse criteria, including their origin, the destination of the documents, the function they support, the type of documents and their contents. Each series is identified by a title formed by a first name, a second name (optional), and inclusive dates. The first name denominates a prevailing identifying element such as the type of series or its content. The second name includes additional distinctions occasionally required for better identification of the series. The series is represented in the automated system according to the possibilities offered by HyperCard to display information in different sequences or layers, i.e., a group of essential elements are displayed on a screen, or card, at the same time. Additional information is displayed only if the user selects that option.

The following elements are simultaneously displayed on a screen: rectorate, provenance (i.e., the office handling the records or documents), name of the series, type of series (permanent or temporary), media, contents, internal arrangement of the series and the classification code (location). The optional elements represented through icons are: additional information about the office of provenance, an expansion of the contents, access restrictions, holdings, descriptors, and administrative controls. This computer record can be associated at the same time with other related information, thus creating a planned network of information.

The information for the automated record is obtained through the survey-inventory sequence previously mentioned and the transfer form, supplemented with additional information, observations, comments, etc., received from the history of the university. The controlled access vocabulary,[16] which is currently under revision, consists of terms or descriptors which are used to reflect the subject and contents of a record series or document.

Storage and Conservation:[17] In storing documents:

- an examination is required to determine the initial structure, materials and degree of deterioration;
- environmental control is required to slow down and prevent deterioration;
- a preventive treatment is needed to preserve as much of the original document as possible; and
- restoration is necessary to return the damaged document or artifact to its original form, design, colour, and function maintaining its esthetic or historic integrity.

The conservation program includes storage in a well-controlled environment and preventive measures. Examination and restoration are done by outside experts. There will be different repositories for records of different media. As a general rule, they will be divided into permanent and non-permanent documentation. Within these areas, files will strictly follow the assigned code for the organizational classification scheme. The repositories must be well equipped to insure security and preservation and to safeguard the integrity of records. Storage will be in boxes of different sizes identified by labels that include: the location of records or series, the sequential order of individual records within the series, and dates, when appropriate.

Services to Users:[18] The services of the Archives are directed first to the university community, and then to the nation at large, specially outside researchers. To guarantee privacy and restrict

access to the information, there are different levels of users, depending on the type of documentation. Unrestricted documents are available to any user but the restricted documents may be used only by the people identified at the time of transfer or donation by the transferring office, or by a higher hierarchical officer in case of conflict.

The information service is designed mainly to locate and handle original documents or duplications of archive holdings, and to provide references from a document or series. For some intensively-consulted records, the information service will provide specific data and repackage information. The reproduction or duplication of documents will be done by the Archives personnel whenever the state of the original document and the legal restrictions or dispositions permit its reproduction. Loans of originals are not promoted. The central archives will offer all interested university units optimal management of their individual office archives, thus establishing a good relationship between the management of archives and its services.

AUTOMATION

Software Evaluation

The automation of the archives and records system had to take some previous restrictions and decisions into consideration:

- the university administration uses Macintosh micro-computers for their everyday work;
- there is currently a partial telecommunications network connecting two of the four university campuses in Santiago; and
- there is no university policy for office automation, allowing units to take decisions independently as best fit their needs and budgets.

The Archives team was hoping to use the existing software, thereby avoiding involvement in developing a new application. A literature review[19] was carried out and the software currently in use in Chile or available on the market was evaluated. This included evaluating full text retrieval software such as BRS and KNOSSYS, and bibliographic-oriented software such as Micro-ISIS and NOTIS[20], as well as DBASE III. Though some of these programs were easy to use like Micro-ISIS and NOTIS (the latter is installed in the automated, national network, RENIB, and used by the National Archives) none of them could handle multimedia records, link different documents, or be adapted to the particular needs of the Archives system.

HyperCard: Emerging Technology

After considering these options, we learned of the existence of a revolutionary tool for the management and the presentation of information as well as for its access. HyperCard,[21] developed for Apple Inc. by Bill Atkinson, creates a platform that allows the generation of applications from different points of view.

Traditionally, information systems have been built with the support of database management systems -- together with programming languages -- that facilitate data retrieval according to a set of queries previously established. To do this, most systems require thorough definition and careful

design for implementation. A user behaviour model would be reflected in the application design, and any change in this model would mean the reconstruction of a large part of the system. This means that when developing a system, storage structure and information retrieval are given more attention than the information itself. In many cases, the user has to know the structures instead of the system knowing the user.

On the other hand, the lack of experience in the university and the nation in the management of an archives and records system made it difficult to know the systems requirements because the user profile was also unknown and any effort at a detailed design entailed risks. It was therefore necessary to count on a development tool that would allow for the construction of system 'prototypes'. A prototype, in this case, is a piece of software rapidly developed and easily modifiable that makes it possible to obtain the skeleton of a system and shows the functionality of the finished system. In this sense, HyperCard was considered a good alternative because it has an object-oriented programming language, 'HyperTalk', that favours incremental development.

HyperTalk is the scripting (programming) language for the HyperCard environment. Powerful and easy to use, HyperTalk activates HyperCard: it is the glue used to link and control actions of HyperCard objects. This tool helps in the generation of prototypes and saves time and money in software development. Users do not need to know the programming language HyperTalk, because many of the programming capabilities are already included in HyperCard and are easily copied, pasted or adapted. The prototypes' generating capability was not the main reason for choosing HyperCard: it also offered other new tools not available in other software.[22]

HyperCard's architecture and interface make it easy to exchange, organize, and present information. There are five kinds of objects in HyperCard -- buttons, fields, cards, backgrounds, and stacks -- objects which can communicate with each other, with the user, and with HyperCard by sending messages. For example, pressing a button or a field is a message to that object.

The basic unit of information is a 'card', represented by a screen. Cards are associated to backgrounds and a background may be shared by more than one card. The card overlays the background. At any given time, HyperCard's environment consists of one open (or visible) card, the background of that card, the buttons and fields belonging to the card and those belonging to the background. Cards are grouped in stacks, which are Macintosh files. Cards in a stack usually contain related ideas: you move from card to card in the stack according to some scheme by which ideas are organized. Stacks can be structured exactly the way the user wants them to be.

Buttons are action objects or "hot spots" on the screen: when you click a button with the "Browse" tool, something happens, depending on the button's script (which is written in HyperTalk). 'Buttons' are modular programs and they may be represented on the screen by words or by small drawings (icons). Buttons can perform different tasks, according to their programming instructions. They belong either to cards or to backgrounds; they can send the user to another card, to another stack, generate sound or play music, search for information in a field, call a new application, dial the phone, link one card with another, or operate a video player, a laser disk, etc. Buttons can be tailored to specific needs and placed on any card. A user can easily use the button tool to copy or create new buttons and to modify the scripts (programs) that tell buttons what to do. Cards can contain fields where information is registered. Fields carry text (strings of characters) which can have various characteristics, such as different fonts and styles, and can be scripted to execute instructions. Fields belong either to cards or to backgrounds.

HyperCard implements the Hypermedia concept, and thus has the capability of integrating and controlling several types of communications media such as text, images, sound and videos, thus

allowing for the development of systems that manage multimedia information. "Hypermedia is not designed to be printed. Its publication is of necessity interactive, to be mediated by a computer. Once it is printed, it is no longer hypermedia but becomes just another linear article, journal, books or series of books."[23]

HyperCard integrates text and images. A card can hold text and images simultaneously. In the case of the university Archives, this capability is very important because it enhances the value of the contents found in the documents. HyperCard also links related information. A user seeking information often becomes interested in other related information. Using the buttons tools, HyperCard permits the creation of explicit links as a way of accessing related information.

Hypercard emulates the HyperText concept, i.e., it permits the display (expansion) of hidden text linked to buttons that the user can 'press' selectively. Thus, it is the user who decides what to see, selectively expanding the information. "Hypertext is a form of access that can overcome some of the disadvantages of Boolean logic searching, although it cannot replace text and string searching with or without Boolean functions. It is used in searching to assist the reader in finding and quickly moving to material that is related in one or more specified ways to the material that is currently displayed."[24]

HyperCard lets the user direct the search. Unlike traditional systems in which searches are predefined, with HyperCard the user can control the search and navigate through the information according to his interest and in accordance with what has already been pre-coordinated in the system. HyperCard includes built-in capabilities for searching (for example, the "Go Menu") and for navigating among cards and stacks on a disk.

Design and Implementation

It was decided to use HyperCard for the information system assisted by additional available software such as Excel, MacDraw and Macintosh Word. During the second stage of the project, Excel, or any other software in use, will be linked to HyperCard to allow direct input of data available in another software or to access externally available information. The traditional design process was then modified because of the unique opportunities offered. For example, what was represented before in fixed length fields could now be represented by cards in different layers of information with various lengths, and different fonts and sizes.

In order to find solutions pertinent to the Archives system, the software design process was mixed with the generation, implementation and testing of prototypes. The system was divided into modules and the data defined as follows:

Rectorate (Annex 3a): The rectorates of the university, as well as the administrative units belonging to each rectorate, were located in the same module where an initial card gathers information on all the Rectors, represented by buttons. With these buttons a user accesses the information of the corresponding rectorate, represented in the organizational chart by a button that is linked to a card that holds information related to that specific administration. From the card on the rectorate, a user can also access the Rector's biography and photographic image through the links established under the names of each Rector.

Organizational chart (Annex 3b): It was decided to show this level of arrangement by graphically representing each rectorate's last organizational chart of the university. Inside the organizational chart box, three types of information were considered. They are represented by buttons under icons.

One button activates a general information card about that organizational unit, another activates information on the hierarchical position of that unit, and the third activates the groups of documents that belong to that unit.

Groups and list of series (Annex 3c): For each office within a rectorate, this module holds the groups and lists of series with their classification codes. The screen is divided into three distinct areas: groups; series or document titles alphabetically listed; and classification codes associated with the series or documents. When the group area is pressed, the system shows that group's series titles and classification codes. When a classification code is pressed, the system shows the holdings for that series. When the title is pressed, the system shows the main card that describes the series with different display levels or text expansion. This way, by simply clicking the 'mouse' in the selected area, the user interacts according to his needs and/or interests.

Series (Annex 3d): This stack holds the cards that represent the main body of description for each series through fields: title, classification code, description, holdings, descriptors, access restrictions, and others. Of these, only the most relevant are displayed on this level; the rest can be seen under the buttons which represent their information and can be expanded when needed.

Aside from the three modules described, there are two others with complementary information. One holds the biographies of each rector and general characteristics of his rectorate, the other holds information on the functions of each unit within the university. Another phase of the project is the storage and retrieval of still images related to the university. Initially, only the images that enhance the present description levels are incorporated, such as the photographs of the Rectors (Annex 3e).

Information Retrieval

HyperCard and related tools permit the construction of information retrieval facilities. The following retrieval options were created for the system developed for the Archives.

Navigation: The navigation tool is a very useful search capability in an archives and records environment, due to the fact that series or groups or documents do not have a proper title (AACR-II), but a supplied title. Navigation helps the user by narrowing down his search through the organizational structure, without the need to know the exact title. The user navigates on a hierarchical basis through the different levels of arrangement defined and incorporated in the system. The user can go from an opening screen to the rectorate level, then through the organizational chart until he reaches the office he needs. There the user can choose from among three options: information about the office; hierarchical dependency of the office (sections or branches); and groups and series titles that belong to that office. From the groups and titles of series, he can navigate further down to the description of the series or the holdings. All of this is done very attractively, using the mouse and navigating through graphic and iconographic representations.

Full text retrieval: This search mode is very useful for users who have very little information on what they are searching. Although the system provides the facility, it is not very fast because it has to search in every field, card and stack to match the users' query. This mode is represented by an icon which, when activated, displays a formatted screen where the user writes his search term.

Specific field retrieval: Retrieval through specific fields is represented by an icon which displays a formatted screen with the following fields: rectorate, provenance, name of the record series and

descriptors. The rectorate and provenance fields have a second level of display in which every rectorate or office is already written. To select the matching query, the user presses the mouse on the selected area without having to write. None of the fields are mandatory; the user must know only one to proceed with the search. This form of retrieval has a very attractive interface which helps the user in selecting alternatives without typing the terms.

Direct retrieval of offices (provenance): The system allows direct access to an organizational unit; it is not necessary to navigate through the organizational chart. This mode is activated by a special icon and oriented to trained users, especially the Archives personnel.

Linking capabilities for broadening a search: The system allows for the possibility of linking a card to another card in the same stack or in another stack. This is done using the "Link to Button" which gives a great deal of control by linking cards and stacks together without having to write programs. Links are explicitly established by the archivist or records manager. A predefined criteria is necessary before linking. In this case, the experience of the archivist, his knowledge of the institution and of the documents can be represented in the system in a simple way, thus providing extra benefits to the user. For example, series with the same function and different names can be linked together within and between rectorates. Thus, whenever the user is looking at a series, he will immediately know of other related series. This is also very useful for displaying the different changes to the organizational chart. The system permits direct access to related information from the card the user has on his screen. By pressing an icon that represents 'links', the user is shown cards linked to the previous screen.

The system is oriented to on line, interactive interfaces with the users. For management and initial implementation, printed tools -- office and archives inventories and lists of coded series for example -- are available in Excel, producing printed products which are used as complementary finding tools. Other printed products such as forms, sets of instructions and procedures manuals are obtained with Macintosh Word. Currently, HyperCard screens are being printed (Annex 3). Printed products are difficult to obtain because the information is recorded on different cards, with different levels, using text expansion and scrolling bars. For printed finding aids, the system must reconstruct the multilevel structure into a lineal report. The requirements for printed products have already been presented for the second phase of the project.

Database Creation and Maintenance

The system was designed to input as well as to maintain automated records belonging to each level of arrangement. To create or edit information, the system must be set in the appropriate authority level, a HyperCard facility. For the creation of a new series, the user must be positioned in the screen that shows the groups, series and classification (index screen) of an organizational unit (Annex 3c). To create a new group, the user places the cursor on the 'group area' of the screen and clicks the mouse. The system offers a group-creating screen, where he can incorporate the group name. A series cannot be created unless the group already exists. The system is automatically updated and when returning to the index screen, the new group will appear in the group area. The user will then select this group in order to create the new series. If the group required for the series already exists, the user selects it.

To create a new series, the user opens an icon that offers three options: create, update and delete. He selects the 'new' option' and the system offers a screen (Annex 3f) for inputting a series title with the code corresponding to the rectorate and provenance office, the group and a blank space for the title. After inputting the title and completing the code, the system automatically

offers a new screen to input the remaining fields (Annex 3g). The 'series record' is updated on-line (like all of HyperCard), and the user has immediate access to the information. Once the series record has been created, the system will allow the input of holdings information of transferred documents. For this, the user recalls the index screen and activates the classification codes which open a holdings screen. This can also be made from the main card for a series by activating the holdings icon.

The system allows the editing of existing records at any time. For this, the user selects the editing option, under the lock, on any record-screen he needs to modify. This option permits the modification of any existing information within the record, such as the description, etc.

Future Trends

HyperCard-based multimedia projects typically bring together such diverse technologies as live-action videos and still images stored on laser discs, high resolution colour digitized images, music and speech stored as computer data and CD-quality audio tracks for direct output from a player.

Considering technological advances, the system will grow gradually into a university-wide information system. It is foreseen that the next stage will include:

- the creation of new formats for the input of monographic multimedia information;
- the enhancement of administrative controls (loans, retention schedule, action dates);
- more sophisticated printed reports;
- an automated modality for inputting information from the inventories in Excel;
- interfaces to moving images, interactive videos, CD-ROM, WORM, etc.; and
- an image and photographic collection with scanned images.

CONCLUSIONS

- Establishing a new program in an institution, especially one involving automation, is difficult because two different, complex problems must be solved at the same time: the conceptualization of a system; and the selection of the software/hardware.
- The management of records in a complex institution like a university that handles many different types of documentation is a difficult task that demands careful design and planning.
- The records/archives of an institution are a source of information that have to be treated, not only as physical objects, but also as information required for the management of the organization.
- A records and archives system should be designed as an information system, optimizing the information service by integrating the different types and levels of archives and records

(individual records or series), diverse media, and allowing users' interface in the most efficient way.

- A functional, integrated information system has to be automated using the latest technologies.
- It is possible to merge and manage administrative records and archives in a flexible, automated environment. Furthermore, the design of the information system can easily accommodate records and archives allowing for the necessary distinctions and requirements.
- Records and archives management today is an activity that requires specialists from diverse backgrounds: information specialists, planners, engineers, computer engineers, historians. It is most important to form a multidisciplinary team for the design stage and during implementation.
- Expert engineering consultancies proved to be essential for the design of a complex system, and were both cost and time effective.
- Facing a problem for which there is no strong local or intra-university practice represents a big challenge that can only be overcome by the obtention of a sound bibliography on the subject. In our case, it included papers and books primarily from the United States and Great Britain and, to a lesser degree, from Spain.
- The literature provided a general framework for the definition of what was to be done, but did not offer clear and direct guidelines, such as those available for libraries. This meant considerable creative effort had to be put into establishing criteria to apply when defining the system.
- The trial and error methodology used for developing some aspects of the pilot project proved to be a good option for obtaining results in a relatively brief period -- the course could be corrected in the process without needing costly revisions.
- There are no national standards for archives or current records that could be used as guidelines.
- The lack of expertise in the country was felt when we needed to validate our results with other experiences. We had limited feedback even though the system proved to be very attractive to the library community in Chile.
- Designing a system requiring minimal maintenance costs contributed towards obtaining start-up financing.
- Projects have to be presented to the authorities with a cost-benefit perspective to enable them to be evaluated.

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ANNEX 1

The Catholic University of Chile

The *Pontificia Universidad Católica de Chile* was founded on June 21, 1888, and declared pontifical on 1930. A private (but with substantial public support), urban, multi-campus university, it is one of three catholic universities and one of the 24 government-subsidized institutions within the Chilean university system. Its 16 faculties are distributed on four campuses in Santiago and five regional campuses located in southern Chile.

The technical training centres affiliated with the university are DUOC, Rural Life Foundations, Baviera Foundation, Catethetical Home and the San Fidel Seminary. These centres carry out technical-academic extension activities in rural and agricultural areas. Other PUC activities are a Sports Club, a television network that broadcasts into 44 cities, and a Clinical Hospital dependent on the Faculty of Medicine.

Over the last few years, the university's leadership in research and graduate programs has had considerable influence on the country's cultural and scientific development. It has registered an important number of inventions in chemistry (a copper refining process), in engineering (an induction oven), in medicine (vaccines), and in architecture (the design of the main building of the university and the National Library). In the last ten years, nine faculty members have been awarded National Prizes in art, literature, science, education and history. Twenty-five percent of the national scientific production is done by the university.

The University offers the following undergraduate degrees: bachelor, licenciate and professional. At the graduate level it offers master's degrees, doctorates and some diplomas. The university has 16 000 students with an annual enrolment of 3 000 and a staff of 1 200 full-time professors, 1 000 part-time and 1 600 administrative and clerical personnel. Seventy percent of the faculty members have formal graduate training.

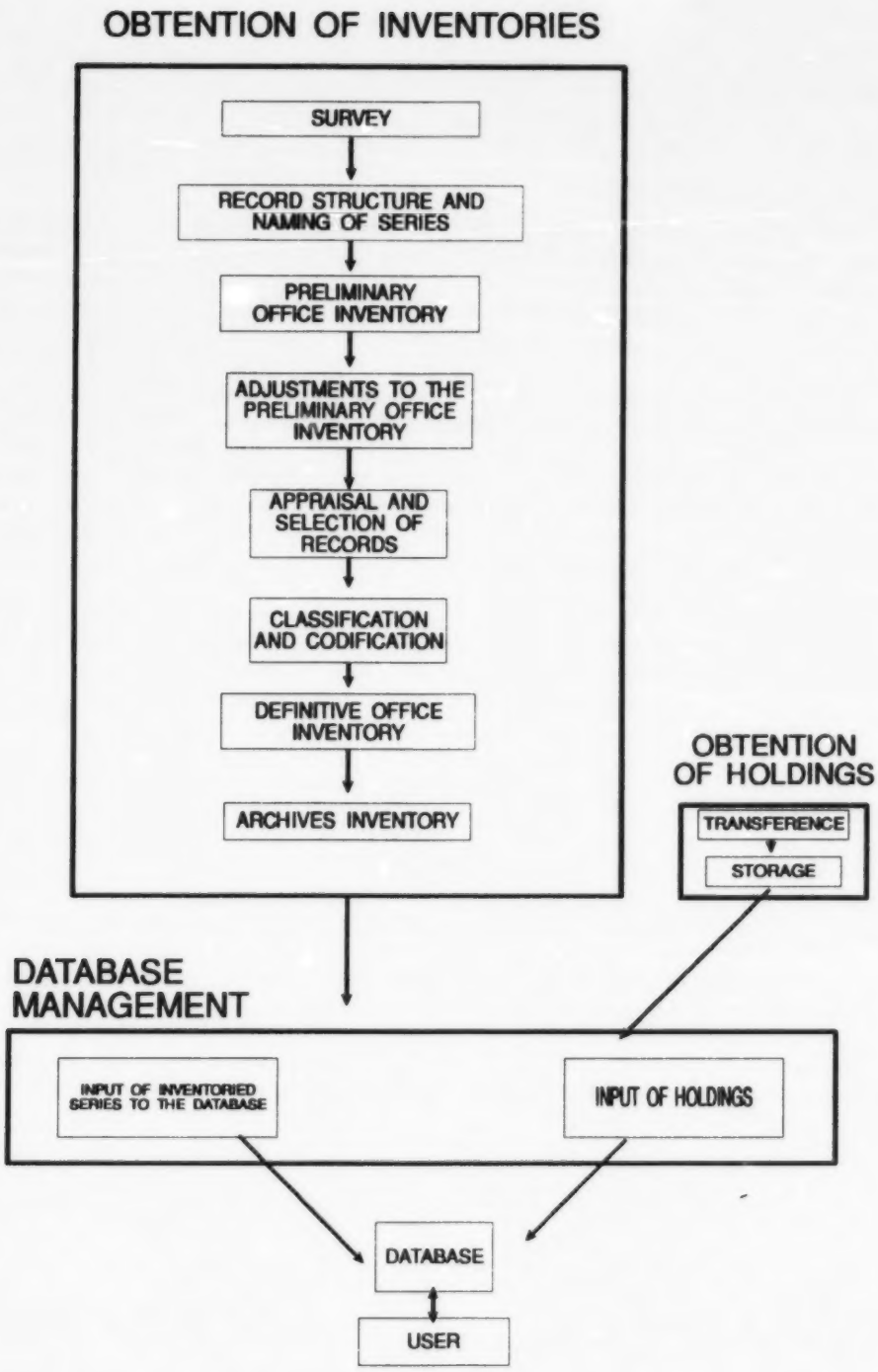
The main campus is located in Santiago and houses the following faculties: Agriculture; Architecture and Fine Arts; Biological Sciences; Chemistry; Economic and Management Sciences; Education; Engineering; History, Geography and Political Science; Law; Letters and Humanities; Mathematics; Medicine; Physics; Social Sciences; and Theology.

The university counts on well-equipped facilities such as the automated library system formed by a central library and 11 branch libraries. Computer centres are distributed throughout the campuses and serve different sectors, such as students, administrative staff, and faculty, thus creating the highest computer culture among the country's universities.

As part of its extension activities, it includes a theatre, music groups, art exhibits, the only long-distance educational television program (open education), a publishing house, and a variety of periodicals produced by the faculties.

ANNEX 2

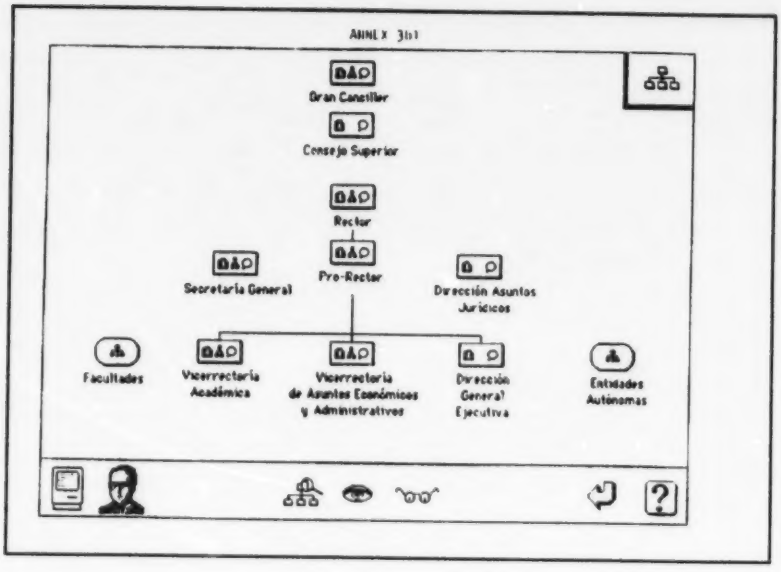
Archives System Flowchart



ANNEX 3

ANNEX 3a

ANNEX 3b1



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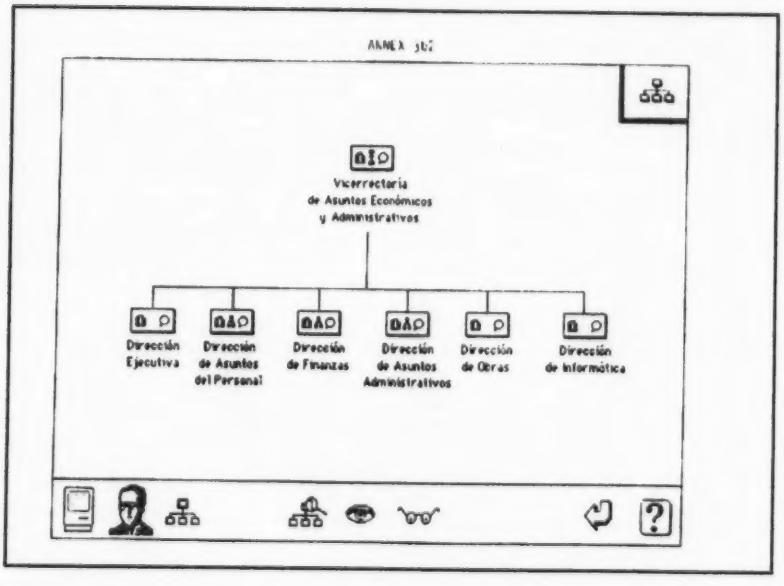

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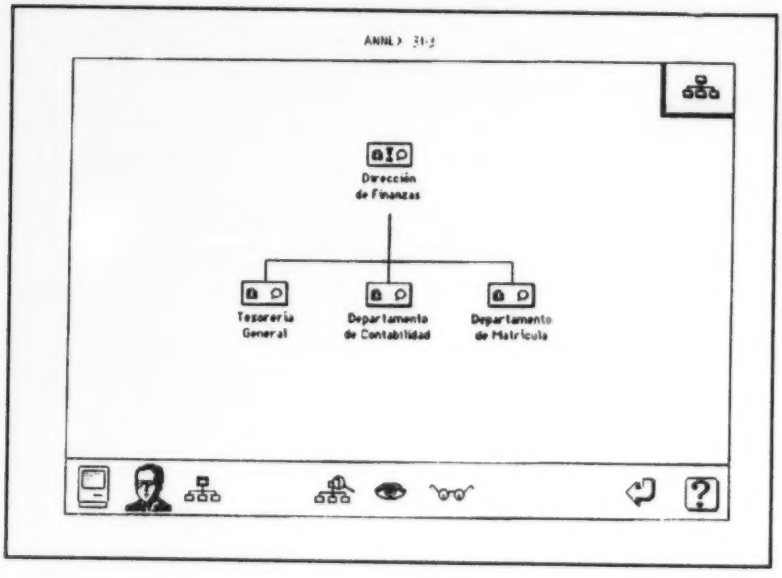
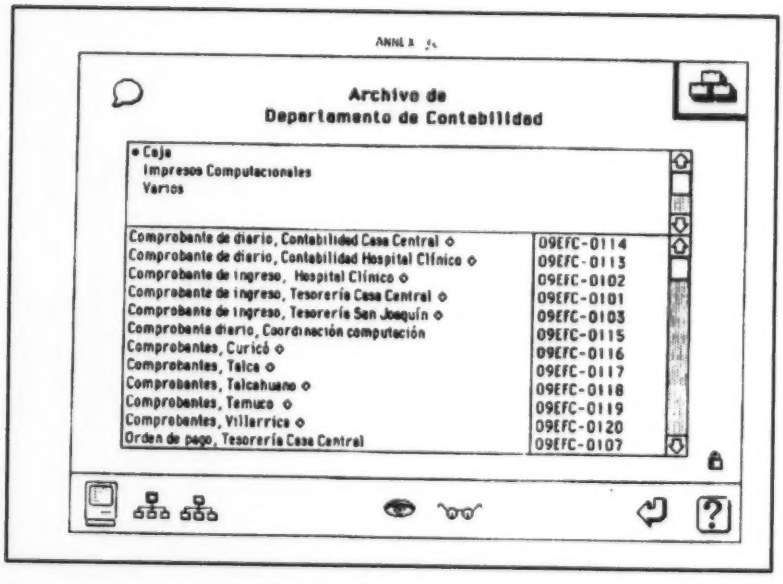


ANNEX 3c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Caja
Impresos Computacionales
Varios
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Comprobante de ingreso, Hospital Clínico ◇ 09EFC-0102
Comprobante de ingreso, Tesorería Casa Central ◇ 09EFC-0101
Comprobante de ingreso, Tesorería San Joaquín ◇ 09EFC-0103
Comprobante diario, Coordinación computación 09EFC-0115
Comprobantes, Curicó ◇ 09EFC-0116
Comprobantes, Talca ◇ 09EFC-0117
Comprobantes, Talcahuano ◇ 09EFC-0118
Comprobantes, Temuco ◇ 09EFC-0119
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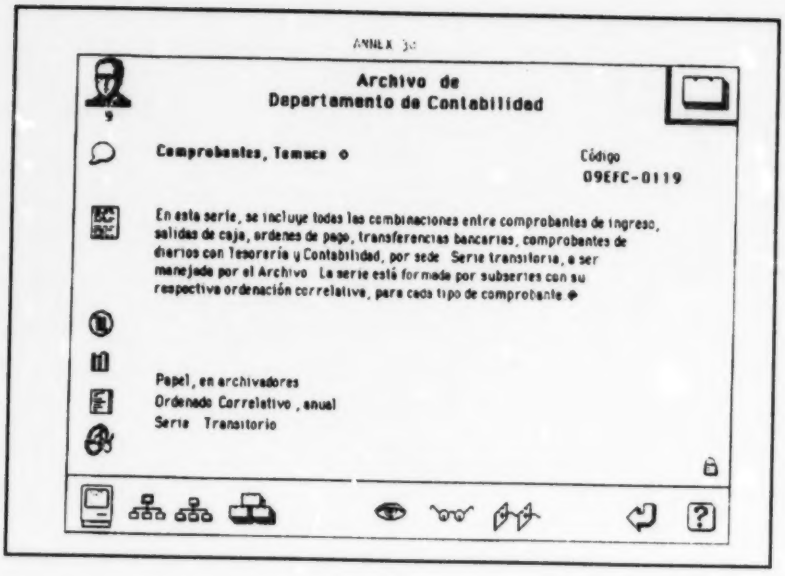
Orden de pago, Tesorería Casa Central 09EFC-0107

ANNEX 3d


ANNEX 3d
Archivo de
Departamento de Contabilidad
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Código
09EFC-0119
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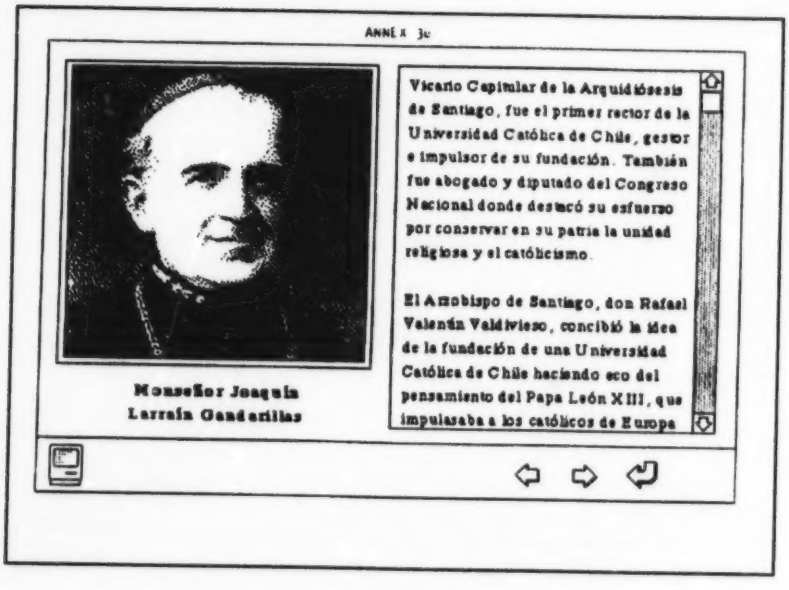
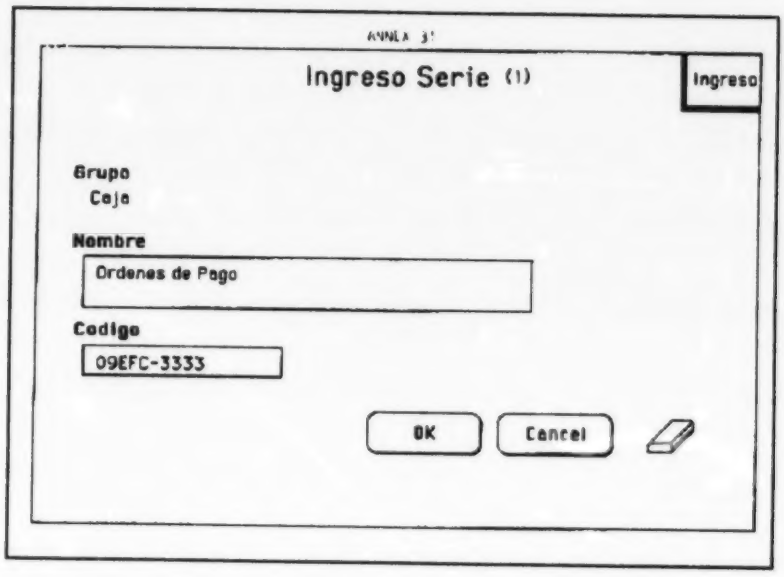
Papel, en archivadores
Ordenado Correlativo, anual
Serie Transitorio

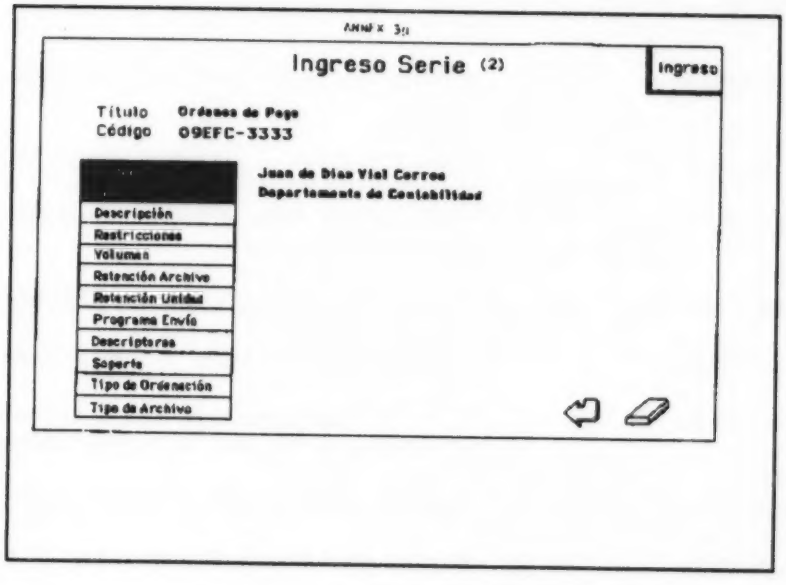
ANNEX 3e


ANNEX 3e
Monseñor Joaquín
Larraín Gandarillas
Vicario Capitular de la Arquidiócesis de Santiago, fue el primer rector de la Universidad Católica de Chile, gestor e impulsor de su fundación. También fue abogado y diputado del Congreso Nacional donde desmcó su esfuerzo por conservar en su patria la unidad religiosa y el catolicismo.
El Arzobispo de Santiago, don Rafael Valentín Valdivieso, concibió la idea de la fundación de una Universidad Católica de Chile haciendo eco del pensamiento del Papa León XIII, que impulsaba a los católicos de Europa

ANNEX 3f



ANNEX 3g



APPENDIX: PARTICIPANTS SUPPORTED BY IDRC

M. Wilfrid Bertrand	Directeur général, Archives nationales de Haïti, Port-au-Prince, Haïti
Mr. Hassan Bin Mohd	Head, Public Records, National Archives, Kuala Lumpur, Malaysia
Ms. Marialyse Délano	Proyecto Archivo, Pontificia Universidad Católica de Chile, Santiago, Chile
Ms. Stephney Ferguson	National Librarian, National Library of Jamaica, Kingston, Jamaica
Ms. Soledad Ferreiro	Proyecto Archivo, Pontificia Universidad Católica de Chile, Santiago, Chile
Dr. Meena Gautam	Assistant Director, National Archives of India, Janpath, New Delhi, India
Mr. Lim Guan Hock	Assistant Director, National Archives, Singapore
Mrs. Angelina Kamba	Director, National Archives of Zimbabwe, Harare, Zimbabwe
Mrs. Christine Kisiedu	Department of Library and Archival Studies, Accra, Ghana
Mr. Liang Zhang-Cheng	Deputy Director General, State Archives Bureau, Beijing, China
M. Saliou Mbaye	Directeur des Archives nationales du Sénégal, Dakar, Sénégal
Mrs. C. Nengomasha	National Archives of Zimbabwe, Harare, Zimbabwe
Mr. Hammad H. Omar	Director, Department of Tourism, Museums and Archives, ESARBICA, Zanzibar
M. Almamy Stell Conte	Directeur des Archives nationales, République de Guinée
Mr. Daniel Tetteh	Director, National Archives of Ghana, Accra, Ghana
M. Mbaye Thiam	École de Bibliothécaires, Archivistes et Documentalistes de l'Université Cheikh Anta Diop, Dakar, Sénégal
Mr. Djoko Utomo	ARSIP Nasional Republik Indonesia, Jakarta, Indonesia
Mr. Xu Yuquing	State Archives Bureau, Beijing, China